MITIGATING VALUE CONFLICTS IN LARGE INFRASTRUCTURE PROJECTS IN INDONESIA

The Case of the National Capital Integrated Coastal Development (NCICD) Plan

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Executive Summary

In the effort to address flood problems in Jakarta, the Indonesian and Dutch Government finalized a study called Jakarta Coastal Defence Strategy (JCDS) in 2011. In the study, it is concluded that an offshore solution is crucial to protect Jakarta from the threat of sea level rise in the coastal area. The collaboration between these two countries was later continued by realizing the Master Plan for the National Capital Integrated Coastal Development (NCICD). The main purpose of this master plan is to provide a long-term solution for flooding problems. In addition to the main purpose, this plan also addresses other urban problems, proposes a solution to improve the coastal zone area and facilitates socio-economic development in the area. This project encounters high resistance from public and is deemed to be controversial in the public domain as the plan includes the construction of a large protection wall enclosing the sea and land reclamation. The public perceives that this project would have fatal environmental and social impacts, including the disappearance of mangrove forest, undesirable effect on the livelihoods of vulnerable communities, etc. Hitherto the plan has remained controversial, despite formal assessment conducted by the Indonesian government and Dutch consultants, in which the plan is considered as a measure to save Jakarta from being a sinking city caused by an alarming rate of land subsidence. Noting this constant debate of the project, identifying values of stakeholders is, therefore, important to understand the underlying reasons of persistent oppositions. Hence the objective of this research is to develop an approach for mitigating conflicting values in a public project in Indonesia as the supporting tool for decision making process.

To be able to understand the decision-making process and identify the values at stake, an analysis was performed based on 243 newspaper articles which were selected using the keywords: '*giant sea wall*' and '*NCICD*' within a time period of 57 months; from January 2011 to September 2016. From these articles, the decision-making process was constructed to analyze how the decision-making process was conducted in the past and what important aspects have been missed in the implementation of decision-making process. In addition, values of the stakeholders were also identified by analyzing the arguments set forth by diverse stakeholders.

From the previous literature and analysis in this research, it has been observed that there are certain stakeholders who are necessary to be involved but are still underrepresented in the plan. Furthermore, the values which are fundamental to certain stakeholders have not been covered in the previous assessments. Therefore, in this research, the values of stakeholders are adopted as the basis of using expert methods in decision-making process in combination with the stakeholder participation method. To conclude this research, the following list is the summary of

the developed approaches in which an adapted version of existing methods are used to address specific value conflict: EIA and MCA as the method to mitigate the value conflict of safety, economic development vs environmental protection (i), CBA as a method to mitigate safety, economic development, cost-recovery vs economic and welfare (general), utilities (ii), VSD as the method to mitigate value conflict between safety, economic development vs economic and welfare (affected communities), culture/ Identity (iii), and VSD as a method to mitigate value conflicts between safety, economic development vs port development (economic interest) (iv).

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Introduction

This chapter presents brief introduction of NCICD which is the target project for the case study and the reasonings behind the implementation of the project and also the controversies surrounding the project. The research problems are presented in section 1.2, while social and scientific relevance of this research follow in section 1.3. The research objective and questions are introduced in section 1.4. Furthermore, the outline of the whole master thesis is presented in section 1.5.

1.1 Background

Perennial flooding is a common event in Jakarta during rainy season. The topographical condition of Jakarta, which is located in a flat low-lying region with 40% area under sea level, makes this city a flood-prone area. The flood that constantly affects Jakarta has been growing worse as the city strives to keep pace with urbanization. One of the severe floods happened in 2007. The flood disaster caused an approximately financial losses of $544 million and 76 people were reported killed (Coordinating Ministry for Economic Affairs, 2014a). Such disasters, according to World Bank report, will create serious socio-economic damage since the floods are likely to occur more frequent in the future (Goodyear, 2013)

In the effort to address the flood problems, the government of Indonesia requested assistance from the Dutch Government to analyze the cause of flood disasters in Jakarta. Jakarta Coastal Defence Strategy (JCDS) that was finalized in 2011 came to the conclusion that an offshore solution is crucial to protect Jakarta from the threat of sea level rise and rivers in the coastal area (Coordinating Ministry for Economic Affairs, 2014a). The collaboration between these two countries was later continued by realizing the Master Plan for the National Capital Integrated Coastal Development (NCICD). The main purpose of this master plan is to provide a long-term solution for flooding problems. In addition to the main purpose, this plan also addresses other

urban problems, proposes a solution to improve the coastal zone area and facilitates socio-economic development in the area (Coordinating Ministry for Economic Affairs, 2014a).

However, the proposed plan is not without criticism. The plan to build a sea wall is also integrated with the land reclamation plan in the coast of North Jakarta. The main opposition comes from the People's Coalition for Fisheries Justice (KIARA). This group remarks that land reclamation which has been begun in the early 2000s would not give benefits to the city, even neglecting the environmental aspects and local interests (Jakarta Post, 2010). Furthermore, this group emphasizes that the construction of a sea wall merely aggravates the social and environmental negligence (Silver, 2014).

Silver (2014) stated that this project is a typical problem of a megaproject carried out without public involvement. Silver (2014) therefore underlined the importance of public engagement to alleviate the resistance of affected citizen. Furthermore, several scholars indicated the significance of stakeholder involvement in decision making process and implementation of projects. For instance, Tulder, Kaptein, Mil, & Schilpzand (2014) mentioned reasons of involving stakeholders in policy development and decision making process which consist of pragmatic, moral, and concerning content. Firstly, the pragmatic reason of stakeholder participation is that involving stakeholders gives assurance of getting support from different parties since their perspectives are taken into account during decision making process (Tulder et al., 2014). Secondly, stakeholder involvement increases the legitimacy of a decision (Tulder et al., 2014). Lastly, stakeholder participation can result in better argument as a foundation for a decision because more diverse insights and knowledge are incorporated into a decision (Tulder et al., 2014). Hence, stakeholder participation could be of help to make the project better implemented.

1.2 Research problem

1.2.1 North Jakarta and its urban problems

Perennial flooding is a common problem in Jakarta in the rainy season. From the topographical condition, Jakarta is located in a flat low-lying region intersected by thirteen rivers flowing through the city which makes this region prone to flood disaster (Jha, Bloch, & Lamond, 2012). Furthermore, Jakarta needs to confront the problem of high tides and rising sea water level that can cause a serious threat of inundation, particularly in North Jakarta area (Firman, Surbakti, Idroes, & Simarmata, 2011). This condition is exacerbated by the fact that approximately 40% of Jakarta region, mostly in the northern part of this area, is below sea level.

In addition to the topographical condition of Jakarta, the environmental degradation of North Jakarta coastal area, particularly the land subsidence problem, is perceived as one of the factors that aggravate the state of the flooding problem in Jakarta (Coordinating Ministry for Economic

Affairs, 2014b). According to Abidin et al. (2011), there are four factors that induce land subsidence in Jakarta, which are: subsidence caused by groundwater extraction; subsidence induced by a load of constructions, subsidence due to the natural consolidation of alluvium soil; and geotectonic subsidence. Groundwater extraction is believed to be the main reason of land subsidence in North Jakarta. Across the North Jakarta Coastal Area, the observed subsidence rate is 2 to 20 cm per year (Coordinating Ministry for Economic Affairs, 2014b). Ward, Marfai, Yulianto, Hizbaron, & Aerts (2011) mentions that the subsidence rate in the northern part is generally more rapid than the southern part. In the next 15 – 20 years, it is forecasted that the northern part will be 4 – 5 m under sea level (Ministry of Infrastructure and Environment, 2012). The threat of permanent inundation might be happened in the future even for low tide if the problem is not addressed (Ministry of Infrastructure and Environment, 2012).

Another problem that is urgent for Jakarta region generally including North Jakarta is water quality and sanitation. Only 14,700 m3 of 23,400 m3 per day of garbage are collected by the City Sanitation Office and the remaining garbage is disposed on informal disposal sites or in rivers which will end up in Jakarta Bay (Steinberg, 2007; Coordinating Ministry for Economic Affairs, 2014b). Consequently, water quality problems in the rivers and Jakarta Bay are serious issues due to heavy pollution of organic material and human waste (Coordinating Ministry for Economic Affairs, 2014a).

Moreover, the population growth caused by urbanization has increased housing demand in Jakarta. In Jakarta, the need of housing is projected around 70,000 per year. Particularly in Jakarta Bay, the characteristic of the settlement consists of fishermen settlement, slum area, illegal settlement on the river banks, urban village, and real estate area. Data from Podes 2012 show that 6 % of the total population in Jakarta bay lives in a slum area (Coordinating Ministry for Economic Affairs, 2014b). This is in line with the study by Yoo, Kim, &Hadi (2014) that suggested North Jakarta as the most vulnerable district in Jakarta with the largest slum population. The indication of large slum population can also be found from BPS-Statistics Indonesia. The low-income group has constantly increased by around 18% from 2004 to 2008 in North Jakarta which is mostly concentrated in the coastal area.

Furthermore, this capital city has to deal with the lack of connectivity system. The most crucial issue is the severe congestion problems that negatively affect the economic growth of Jakarta. Lack of road infrastructure and reliable public transportation are considered as the main reasons for this problem. The gridlock problem is intensified when the flood occurs. In addition, the growth of the east-west corridor of Western Java is affected as the connectivity to the Soekarno-Hatta airport and Tanjung Priok port is heavily impaired by flooding (Coordinating Ministry for Economic Affairs, 2014a). Therefore, road networks connecting several places across the city are needed to reduce traffic load in Jakarta and its neighboring cities. Another essential issue is that

Tanjung Priok port as the main seaport and economic driver and Soekarno Hatta Airport will reach maximum capacity. Thereby the expansion spaces are required for further improvement of the seaport and airport.

1.2.2 Stakeholders and their values

Urban challenges in Jakarta are complex problems that have an urgency to be solved. However, it can be a difficult task since many stakeholders are involved and have their own interests and perspectives. Actor's values and their roles in society influence their interests in a problem (Mayer, 1997). These values can largely differ among stakeholders.

Involving relevant actors in dealing with complex problems is a crucial element in policymaking. The possibility of getting the lack of support or even worse opposition might happen if the concerned government disregard the existence of other actors in policymaking (Van de Riet, 2003). Consequently, the implementation of policy can be delayed as a result of opposition. The example in Indonesia is the construction of East Flood Canal Project as the solution of flooding in Jakarta. This plan was first introduced in the Master Plan of Drainage System and Flood Control for Jakarta in 1973, implemented 30 years later in 2003, and finally completed in 2010. One of the factors that impede the construction of this project is the limitation of actors involved in decision making process, e.g. land owners, NGO's, community forum (Simanjuntak, 2010). In this case, she argues that the limited stakeholder engagement in decision making process is not compatible anymore with the transition towards a decentralization system and the increasing power of civil society. Furthermore, giving the room of negotiations to the relevant stakeholders will increase the acceptance of a certain project.

Realizing the complexity of urban challenges in Jakarta, specifically in North Jakarta, the perceptions of relevant stakeholders need to be considered in the decision-making process. For example, fishermen who live in the coastal area are concerned about securing their livelihood, primarily regarding their settlements and the availability of fish or other ocean products as their main source of income. On the other hand, the private industries and developers have the objective of finding the opportunity to maximize their profit. Another example is that the main interest of Jakarta Government is to serve the interest of Jakarta citizen. Nevertheless, it is difficult to do justice to all the values of Jakarta citizen and other stakeholders and it may result that not all of the stakeholders involved will be satisfied in decision making process. This problem leads to a question "how to solve the conflicting values among stakeholders?" or at least how to minimize the conflicting values?".

1.2.3 Dealing with urban problems and conflicting values

In recent years, several studies and plans have been formulated by Jakarta Administration and or Government of Indonesia in order to mitigate urban challenges in Jakarta and its neighboring cities.

In 2014, Government of Indonesia released a Master Plan for the National Capital Integrated Coastal Development (NCICD) which is a joint project with Dutch Government. The main purpose of this master plan is to provide a long-term solution for flooding problems from the threat of sea level rise in North Jakarta. This plan is also supported by several studies (e.g. Detailed Spatial Planning of Sub-District and the Re-planning North Coastal Jakarta by Spatial Planning agency in 2011/2012, the Jakarta Climate Adaptation Tools and Jakarta Coastal Development Strategy in 2011 by the Royal Haskoning, the Jakarta Emergency Dredging Initiative (JEDI) in 2010, and Alliance of Green Delta City Defense Planning through major storm, water drainage, and canal system by World Bank in 2009), which generally gave recommendation to construct flood infrastructures with the aim to safeguard Jakarta and reduce the vulnerability of North Jakarta (Simarmata, 2013). Not only focus on flood problems, but NCICD also addresses other water related issues, for example, land subsidence caused by groundwater extraction, water quality issues, sanitation and wastewater treatment issues, proposes a solution to improve the coastal zone area and facilitates socio-economic development in the area (Coordinating Ministry for Economic Affairs, 2014b).

However, the NCICD plan has only been proposed to mitigate the type of flooding that comes from the sea. According to the master plan of NCICD (2014), there are three types of flooding in Jakarta. First is flooding problems that are caused by inadequate water storages to accommodate heavy rains. Second is river or canal flooding as a consequence of high discharges upstream. The last type is flooding problems from the sea. The first two types of flooding are not addressed in the master plan.

In general, this master plan consists of three phases which incorporate plans and conceptual designs as an integrated approach to solving flood and other urban problems: phase A includes strengthening the current coastal defense, phase B comprises the construction of outer sea wall, land reclamation, and also the construction of the iconic design of Garuda, and phase C includes further development for eastern part of Jakarta Bay, for example, sea port development, toll roads, industrial zone development, etc (Figure 1).

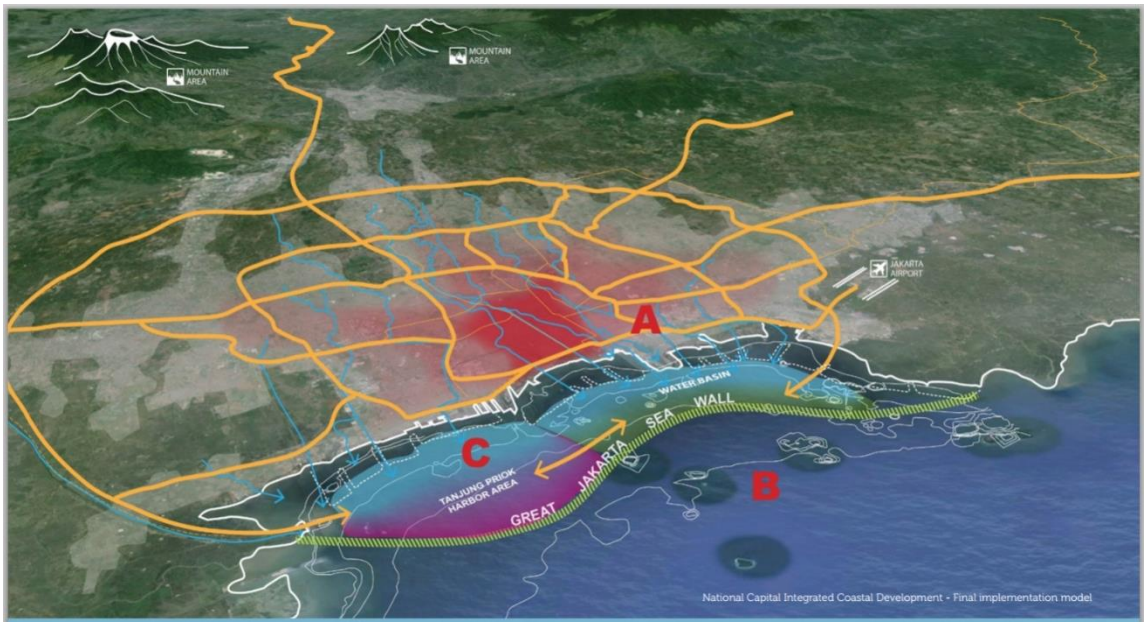

Figure 1-The implementation model of three phases
(Source: Coordinating Ministry for Economic Affairs, 2014b)

However, there are several problems that might lead to opposition from varied stakeholders. One of the most concerned problems is land reclamation plan in Jakarta Bay. As part of NCICD Master Plan, land reclamation is not a new plan for Jakarta. In fact, this plan has been existed in several regulations, including Presidential Regulation Number 52 of 1995 on the Reclamation of North Jakarta Coastal Area. Winter (2009) mentions in his book that previously Ministry of Environment and Ministry of Resettlement and Regional Infrastructure disapprove the land reclamation project to be implemented because of further impacts on environmental degradation and social and economic well-being, e.g. more severe flooding problem, marine pollution, deterioration of marine ecosystem, disruption of many fishermen livelihoods, etc. Although the land reclamation plan in NCICD project is different than the previous plan, the negative impression of land reclamation can complicate the implementation of the project.

Following the previous plan, the land reclamation plan in Great Garuda project will be comprised of central business district and housing. The fishermen and low-income group will be relocated to social housing that accounted for 17% of the total housing in reclaimed land of Great Garuda. The division of housing categories is clearly illustrated in Figure 2. Although Government will allocate a portion of the land for low-income group, there are still some questions left. Is the implementation of this project fair enough for the low-income group? There is also an impression that the private sectors will get the most benefit from the land reclamation project.

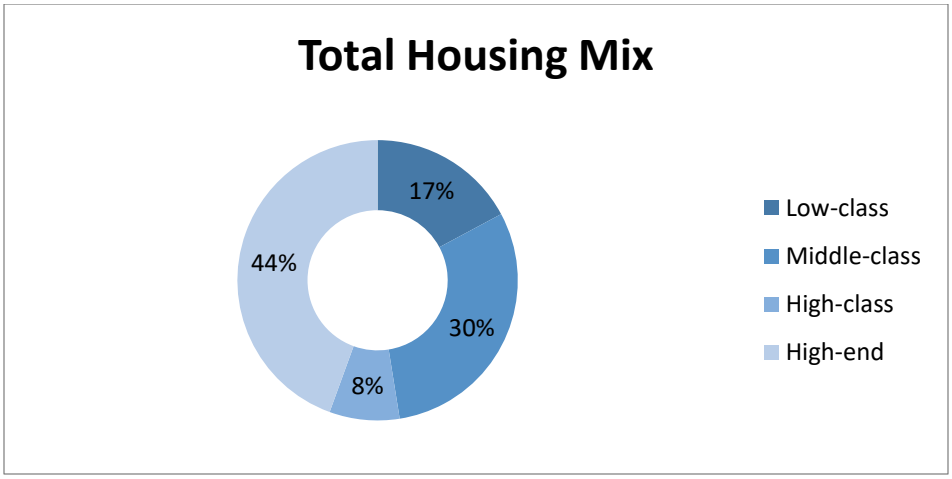

Figure 2-Total housing mix of Great Garuda plan
(Source: NCICD Master Plan, 2014)

Another concern problem from Great Garuda Project is that the direct access to the fishing ports will be hindered by the construction of planned land reclamation and sea wall (Coordinating Ministry for Economic Affairs, 2014b). Moreover, the implementation of fresh water retention as part of NCICD plan will affect the existence of salt water aquaculture (Coordinating Ministry for Economic Affairs, 2014b), hence the fishermen will be negatively influenced by this plan. Considering the importance of the fishery sector to the coastal communities, the fishermen communities voice their opposition to this project through the Indonesian Traditional Fishermen's Association (KNTI) by issuing a statement that at least 16,585 fishermen will be relocated from their home and they might lose their job because of this project (Jakarta Post, 2014).

This Integrated Coastal Development plan used Cost-Benefit Analysis and Environmental Assessment as part of decision making tools. According to Cost-Benefit analysis, the integrated project will be more financially feasible than the individual project since there are some projects that expected to attract investment opportunities from private sectors. According to Van de Poel (2009), CBA is one of the various approaches to deal with value conflicts and trade-off. If optimizing economic value is the primary criteria for deciding a choice from different options, CBA might be the relevant tool since monetary unit is used as the measurement of utility (Van de Poel, 2009).

However, realizing the social impact is an essential issue to be investigated in NCICD plan, a proper method as a decision-making tool that also covers social values needs to be analyzed. Furthermore, considering stakeholder values are crucial in the decision-making process, the expert method can be better implemented in collaboration with stakeholder participatory method. Therefore, a better approach to deal with the conflicting values and help the decision

makers to determine better alternatives for the entire society without diminishing the social impact needs to be explored.

1.3 Social and scientific relevance

Flood is a crucial problem in Indonesia. There are many strategies and regulations that have been designated by the government to reduce or perhaps mitigate the occurrence of flooding in Indonesia. As part of the strategies, the improvement of physical measures as flood prevention tool is still the main approach used by the government. Past experiences of flood mitigation plans show that the decision-making process might take a long time and the problem of delay is something common in this type of project. Besides the political issue, these problems arise due in part to public opposition and limited stakeholders' involvement in the policy-making process.

Currently, the government tries to implement the integrated planning approach which aims to mitigate flood problem from the sea and also other urban problems in the coastal area of North Jakarta. As a consequence, more stakeholders with different preferences and values are involved in this project. Hence value conflicts are something that cannot be avoided. Considering this type of large infrastructure project is still required in order to address many of flood and urban problems in Indonesia, this research can give better approaches for the authorities to deal with different perspectives and values of varied stakeholders in large infrastructure project plan.

As indicated in subsection 1.2.3, Cost-Benefit Analysis and Environmental Assessment were conducted as part of decision making tools in NCICD project. Even though, these assessments were organized, there are still controversies and oppositions toward the project. Thus, this research tries to propose approaches in order to enhance the acceptance of the project by first identifying the values of varied stakeholders as a pivotal role in decision-making process. These values are then adopted as a starting point of using the existing method. The previous literature by Silver(2014) indicates that the project will not get public acceptance without any effort to engage the public and address the concerns of the public. Hence an effort to involve the stakeholders is necessary in this type of project. Based on that, this research also proposes approaches in which the involvement of stakeholders is an important part of conducting the existing method. In the literature, there are many different methods to deal with conflicting values. However, the methods that combine dealing with value conflicts with stakeholder analysis and participation are still lacking in the current literature. Hence, from the scientific point of view, this research tries to contribute in developing approaches in which stakeholder analysis and participation are part of the expert methods in dealing with conflicting values. Furthermore, in general, different types of value conflict in particular project would be addressed by one type of expert method. In this research, the author will give suggestion on which specific expert method should be used for specific type of value conflict with regard to the NCICD project.

1.4 Research objective and questions

The objective of this research is to develop an approach for minimizing conflicting values in a public project in Indonesia as the supporting tool for decision making process. Additionally, incorporating stakeholder participation in the developed approach is also a significant part of this thesis. This kind of large infrastructure project needs public support to be implemented due to its impacts to the society. Previous literature indicates that the involvement of stakeholders can help to gain public support for project implementation. Hence an approach for mitigating value conflicts with the incorporation of public participation will be developed as an objective of this research. A case study of the NCICD Project will be used to build the approaches according to Indonesia's conditions. Based on the indicated objective, the research will be carried out by answering the proposed main research question.

"How can stakeholder participation be used in expert methods for addressing value conflicts in large infrastructure projects of Indonesia, with focus on the National Capital Integrated Coastal Development plan?"

To answer the main research question, the following sub-questions are formulated:
With regard to the case-study:

1. What are existing expert methods for dealing with value conflicts? What are possible approaches for stakeholder participation?
2. Who are the involved stakeholders in this project? And what are their values?
3. How is the current decision-making process and the interaction between stakeholders organized? What are the limitations of the current approach/plan?
4. What are the value conflicts in this project?
5. How can these conflicting values be better addressed in the future, using existing expert methods and stakeholder participation?

1.5 Research outline

This section provides information about the outline of the report to show the logical steps of answering the formulated research questions. This report consists of 8 chapters as depicted in figure 3. The report begins with the introduction of the thesis in chapter 1. This chapter also includes the research problem of the thesis, social and scientific relevance of the thesis, a complete set of research objective and questions, and the overview of outline of the research. After the introduction, literature review with a focus on the germane theories on policy analysis in multi actor networks, stakeholder participation, values, and expert methods on dealing with conflicting values is presented in chapter 2. Following chapter 2, a step by step approach in conducting this research is explained in chapter 3. In chapter 4, a stakeholder analysis for the NCICD project is

performed to understand the perspectives of the stakeholders regarding the project. Then, the decision-making process of the project is analyzed in chapter 5 to understand the efforts that have been made in the existing plan and discuss the observed pitfalls in the current plan. Chapter 6 includes the explanation of the value identification of the relevant stakeholders and the analysis of value conflicts in the NCICD plan. Accordingly, chapter 7 presents the suggested approaches for future improvements on dealing with conflicting values in the NCICD plan. Finally, chapter 8 provides the answers of the research questions, the recommendation for future improvements, and the reflection of the limitations of the research.

Table 1 - Research outline

	Sub-research questions	Chapter
1	What are existing expert methods for dealing with value conflicts? What are possible approaches for stakeholder participation?	Chapter 2
2	Who are the involved stakeholders in this project? And what are their values?	Chapter 4 & Chapter 6
3	How is the current decision-making process and the interaction between stakeholders organized? What are the limitations of the current approach/plan?	Chapter 5
4	What are the value conflicts in this project?	Chapter 6
5	How can these conflicting values be better addressed in the future, using existing expert methods and stakeholder participation?	Chapter 7

2

Theoretical Framework

The second chapter includes the literature review of theories which is fundamental to help answering the main research question and sub-questions. The theories explained in this chapter include the theory of stakeholders, the decision-making process in networks, values, methods on dealing with value conflicts, and stakeholder participation.

2.1 Stakeholders

2.1.1 Stakeholder approach

The classic approach of policy analysis perceives decision-making as rational, top-down, and unicentric, resulting an authoritative decision made by one single decision-maker (Geurts & Joldersma, 2001; Mayer, 1997; Van de Riet, 2003). Whereas in multi-actor policy setting, the decision making process involves stakeholders who are mutually dependent, have important resources and may have conflicting interests, thus the interactions between relevant stakeholders should be addressed in complex decision-making (Mayer, 1997). Stakeholders have the power to block decision-making if the decision is not according to them (Edelenbos & Klijn, 2006). This is in line with the statement by Van de Riet (2003) that mentioned having a higher risk of opposition or lack of support would be the consequence of neglecting stakeholders in the decision making process and this condition may affect the implementation process, for example, the implementation process gets delayed because of the opponents' movements.

The available literature has already pointed out the necessity of stakeholders' interaction in the decision-making process. Nevertheless, to be able to identify the relevant stakeholders, the definition of stakeholders should be selected as a baseline for this research. The most prevalent definition of stakeholder was introduced by Freeman (1984) in his book Strategic Management: A Stakeholder Approach determined a stakeholder as "any group or individual who can affect or is affected by the achievement of the organization's objectives". Meanwhile Eden & Ackermann

(1998) had a different perspective by emphasizing on "the power to be able to respond to, negotiate with, and change the strategic future of the organization". However, the first definition seems more suitable in this research since the marginalised individuals or groups who have less power need to be considered.

In complex decision-making, societal problems might be difficult to handle since there is high possibility that stakeholders involved have different frames in perceiving the problems, so that *"knowledge conflict"* and *"asymmetrical debate"* become common repercussions (Hommes, Hulscher, Mulder, Otter, & Bressers, 2009). Therefore, it is important to know the standpoints of related stakeholders through seeking their underlying values. The following sub section will explain the importance of values in decision-making.

2.1.2 Role of expert vs role of stakeholders

Involving experts in decision making process is indeed necessary for achieving a reliable decision. However, it does not simply mean that their involvement will always increase the quality of a decision, particularly in the complex decision-making process in which many actors with disagreement on values and interests are involved (J. a de Bruijn & ten Heuvelhof, 1999). The experts can perhaps provide information that is scientifically valid, nevertheless, as Van de Riet (2003) cogently pointed out, 'superfluous knowledge' might be produced if special attention is not being paid to the stakeholders in a complex multi-actor setting. In contrast, the process of negotiations that involve many actors may create 'negotiated nonsense' if the results are not in accordance with the current state of knowledge (J. A. De Bruijn & Heuvelhof, 2008). The role of people who has the expertise in a specific area related to the problems is crucial in order to avoid this 'negotiated nonsense' by delivering an objective information (J. A. De Bruijn & Heuvelhof, 2008). Thus, the role of experts is an important complement to stakeholders' perspectives in a decision-making process.

2.2 Decision-making process

NCICD project characterized with the interaction of various interdependent actors who have different values, interests, and perspectives in order to achieve their own goals in decision-making process. This is one of the characteristics of networks that might impede the course of decision-making process (J. A. De Bruijn & Heuvelhof, 2008). Due to its complexity in nature, the reconstruction of a project is necessary to analyze the decision-making process. To be able to reconstruct the decision-making process of a project, Teisman (2000) discussed these following three models in his paper to help analyzing the decision-making process: the phase model (i), the stream model (ii), and the round model. The phase model is characterized by distinct stages of different situations related to the formation, adoption, and implementation, of a policy. In the

phase model, each phase has central actor whose decision overrules the other actors and who would decide the problem and the policy Teisman(2000). The second model is the stream model. The stream model was first developed by Cohen, March, & Olsen in 1972 and then Kingdon gave more detail idea about this model. The idea is that the decision-making process consists of three streams, namely problems, solutions, and politics Teisman (2000). In this model, there is no specific actor whose decision override other actors, but the participants can introduce the problems and solutions according to their perspectives. These three streams are independent in temporal sequence Teisman (2000) , however these streams can be coupled if there is 'window of opportunity' when a problem is recognized, a solution is developed and available, and a political change makes it the right time for policy change. The last model is round model. In the round model, series of interactions between actors are existed in multiple rounds and these interactions will determine eventual outcome of decision making process. In the decision-making process, the actors will have their own opinions regarding the problems and solutions to the problems Teisman (2000).

With respect to the NCICD case, the rounds model is the most suitable to be applied in this specific case due to the involvement of multi-value actors. This model can help us to understand the decision-making process and is used to study the interaction among actors who have different values and perspectives and introduce solutions in different arena through meeting or discussion.

2.3 Values

2.3.1 The importance of values in decision-making

Complex decision-making process involves tradeoffs of key objectives emphasized by affected stakeholders and it might cause the tension among stakeholders. Addressing tradeoffs are not a simple work due to the differences of stakeholders' importance hierarchy (Gregory & Keeney, 1994). For example, in the land reclamation for 17 islands project in Jakarta Bay, decision-makers have to make difficult tradeoffs between economic and environmental objectives. This project is controversial because of disagreement between proponent who stresses the economic benefits of the project and opponent who considers the environmental impacts and further social implications of the project. According to Gregory & Keeney (1994), disagreements may appear when the decision context does not include the objectives and alternatives that particular stakeholders acknowledge valuable, hence a broad decision context is necessary. Thereby, in order to help decision makers in deciding choices for difficult tradeoffs and to broaden the decision context, articulating the values of different stakeholders is consequently becoming crucial in a multi-actor decision-making process.

Before further explanation concerning values, first, we need to understand the definition of value. Van de Poel & Royakkers (2011) defines values as the basic feelings that affect people in

determining their goals. It is something fundamental to ourselves that motivates us to move in a certain direction (Hermans & Thissen, 2009). Sequentially, values will be the underlying forces behind our decisions (Bruno & Lay, 2008; Keeney, 1996). Therefore, in regardsto the decision-making process, understanding the values of stakeholders is beneficial to apprehend the driving forces behind their positions, to diagnose the potential conflicts and to configure the basis of a negotiation among stakeholders involved in this process.

2.4 Value conflict, trade-off, and value incommensurability

Dealing with multiple conflicting values is something unavoidable in many complex decision-making processes. As a consequence, deciding necessary trade-offs among those values is inevitable and such trade-offs could be problematic for decision makers. A trade-off involves gaining the advantage of one value to compensate for a lesser benefit on other different value (Keeney, 2002). However, many scholars discuss the problem of value incommensurability which according to Tetlock (2000) has been mainly seen as the fundamental barrier to trade-offs. Value incommensurable emerged if there is no common scale or metric that can measure the conflicting values (Tetlock, 2000; van de Poel, 2009). This value incommensurability may lead to reluctant attitude to certain types of trade-off (Fiske & Tetlock, 1997).

The term of 'constitutive incommensurability' has been used by several literatures to explain the difficulty to measure the willingness of people to sacrifice one value with the aim of gaining the benefit of other value. It is suggested that in a sense of constitutive incommensurability the trade-off between two values may undermine one of those values (Fiske & Tetlock, 1997; Tetlock, 2003; van de Poel, 2009). Hence this explains why people express negative feelings toward certain trade-offs.

The resistance of certain trade-offs also arises whenever sacred values are involved (van de Poel, 2009). Hanselmann & Tanner (2008) discuss the concept of sacred values in their paper as the values that are not open for negotiation, accordingly, these values are protected from entering trade-offs with other values. They also give an argument that people are having more distress feelings for trade-offs connected to sacred values due to the implication of moral principles, thus decision difficulty might happen.

The trade-off involving two sacred values is known as a **tragic trade-off**. This type of trade-off is identified as much more negatively emotion-laden in a decision-making process (Hanselmann & Tanner, 2008)considering that the compensation of achieving one value may not nullify a loss of other value (van de Poel, 2009). Another situation, that involves trading between the value that ascribed as sacred to some people and secular value, is distinguished as a **taboo trade-off**. In this situation, people are reluctantly sacrificing their sacred values for secular values, e.g. financial

incentive, because they perceive this incentive as morally repugnant. Waytz (2010) in his article describes the feeling of 'moral outrage' and the 'inflexible behavior in negotiation' as a consequence of trying to trade sacred values for money. The other type of trade-off is **routine trade-off** which occurs when people have to decide a trade-off between two secular values. Compared to the other two types of trade-off, Hanselmann & Tanner (2008) argue that routine trade-off is considered as less emotional distressing and less decision difficulty.

2.5 Methods for dealing with value conflicts

van de Poel (2009) discusses several approaches to deal with value conflicts in which he divides the approaches into two categories, i.e. optimizing and non-optimizing approaches. The optimizing approach emphasizes on choosing an option that gives the best possible result from all of the considered decision alternatives. While non-optimizing approach, as argued by Herbert Simon, is emanated from the concept of 'bounded rationality' (Brown, 2004). It refers to the idea that human beings have a cognitive limitation, or in other words, human beings have limited information pertaining to the available alternatives in decision making process. Thus, in this situation, selecting an option that is 'good enough' can be considered as rational(Hsieh, 2008). More elaborated discussion about optimizing and non-optimizing approaches based on the paper by van de Poel (2009) will be discussed in the next sections below.

2.5.1 Optimizing approaches

2.5.1.1 Efficiency and effectiveness

Efficiency and effectiveness are the common measurements to assess whether a design can fully maximize the utility of its function. This is considered to be the basic requirement of an optimal design. However, there are two important things that need to be taken into consideration. First, these two values have the possibility to be conflicted. Second, it is not easy to measure efficiency and effectiveness. Hence, as argued by van de Poel (2009), he illustrates a quote by Petroski that in reality, it might be not possible to attain an ideal design, so the best option is the one with the best compromise. It means that trade-off becomes a necessity in order to maximize the overall requirements of the designs. Thus, Cost-Benefit Analysis (CBA) and Multi Criteria Analysis (MCA) are the approaches that can be used to deal with the trade-off among values. The following sub-sections will explain these two approaches in more details.

2.5.1.2 Cost-Benefit Analysis (CBA)

CBA is one of the methods widely used by the decision-maker(s) to help them evaluating policy or project alternatives by determining the net benefits of each option. This approach quantifies the value of all options in a single common unit, generally in monetary terms. An option with

benefits that outweigh its costs or an option with the highest benefits is usually chosen as a decision.

CBA can be considered as the suitable technique if the economic value becomes the priority in a project. However, there are many criticisms against the use of CBA due to the following issues. Firstly, the problem of valuing the future benefits and costs and also making a trade-off between the present and the future. Hansjürgens (2004) in his paper puts forward the issue of discounting and compensation as one of the limitations of CBA practice. The discount rate is usually used to estimate the current value of future benefits and costs. Applying discount rate could be problematic because the results would be varied differently depending on the selected discount rate. Secondly, the monetary valuation of non-economic values. The valuation becomes remarkably complex when the issues, for example, environmental issue, sustainability, safety, human lives, etc., are involved. The approaches, for instance, Willingness to Pay (WTP) and Willingness to Accept (WTA), have been general procedures for measuring non-economic values. Nevertheless, these value judgement approaches are still debatable for some people. Thirdly, the criticism concerning the utilitarian concept of CBA. The opponents reject the basic concept of CBA that has the intention to maximize the benefits for the greatest number. Some people have the perspective that it does not seem morally acceptable to trade between the utility gains for some and utility losses for others.

2.5.1.3 Multi Criteria Analysis

Multi Criteria Analysis (MCA) is a method to help decision-maker(s) making a decision by comparing different options based on a number of weighted criteria in which the weightages are determined by assessing their relative importance. The score will be given, e.g. an ordinal scale from 1 to 10, to each alternative and the total score of each option could be calculated afterwards by using this equation:

$$w_j = g_i * v_{ij}$$

(Department for Communities and Local Government: London, 2009)

w_j : The total score of the jth option

g_i : The weight of ith criterion

v_{ij} : The score of the jth option on the ith criterion

MCA is considered as a method that can fill the inefficiency that is not addressed in CBA. For instance, not all of criteria can be straightforwardly converted into monetary terms. Instead of monetizing the criteria, the relative importance weightages are given to them. Furthermore, MCA is a way of aggregating different interests of the stakeholders into criteria and thus specifying performance evaluation of each option (Department for Communities and Local Government:

London, 2009). However, the cons of MCA from the opponent's perspective is that the systematic and formalized steps of MCA are considered to be prone to manipulation, very technocratic, and in transparent (Latteman, 2010). In order to prevent the cons of MCA, Latteman (2010) suggested that the MCA process should be well documented and all the relevant alternatives and criteria should be included.

2.5.2 Non-optimizing approaches

2.5.2.1 Satisficing

As described briefly in sub-section 2.5.1, optimizing approach has the basic concept to seek "the best" among the available alternatives, on the contrary, satisficing, which was initiated by Herbert Simon, attempts to find alternative that is "good enough" by deciding threshold values pertaining to the alternatives and subsequently choosing any alternative that surpasses that threshold values (Van de Poel, 2009).

Van de Poel (2009) gives more detail explanation regarding the adequacy of satisficing. In the light of moral values, setting threshold values can be regarded as the requirement to meet a certain value that is morally acceptable. Thus, below the threshold levels, trade-off among values can be considered as unacceptable since it can be interpreted as violating the moral obligation. In addition of that, Van de Poel (2009) also infers that satisficing can be justified because it allows room for moral supererogation concept. Moral supererogation, according to Byron (2004), often deemed as an act that goes beyond "a threshold of moral duty" or, in other words, "above what is required". In a case of dynamic circumstances, Van de Poel (2009) suggests that satisficing might be beneficial for applying the concept of finding the alternative that meets the threshold levels instead of continuously looking for other better options.

2.5.2.2 Value Sensitive Design

Value Sensitive Design (VSD)is an approach which is intended to address the problem of value conflicts through engineering design by incorporating the ethical values into the design (Van de Poel, 2009). Van de Poel (2009) further explains that there are three things that need to be taken into account in VSD, which are conceptual, empirical, and technical investigations. Conceptual investigations intend to understand the values and the possibility of trade-offs among different values. While empirical investigations are necessary in order to recognize the impact of various designs on those values. Lastly, technical investigations aim to develop the engineering design that can support those specific values. It is important to note that VSD as a technical approach cannot entirely address the value conflicts or in the other word, VSD is a partial solution of value conflicts(Van de Poel, 2009).

2.6 Stakeholder Participation

2.6.1 Definition of participation

In general, there is a consensus that stakeholder participation can enhance the effectiveness and quality of the implementation of a decision and also promote sustainable decision (OECD, 2001; IAP2, 2015; Aarhus Convention, 1998). Despite the increasing popularity of participation, different authors have different perspectives of participation. For instance, participation may be defined as "the involvement of individuals and groups that are positively or negatively affected by a proposed intervention (e.g., a project, a program, a plan, a policy)" (André, 2006). However, World Bank (1996) emphasized stakeholders influence and share control in decision making process. Furthermore, some authors insist that the definition is only justified if the decision makers are significantly influenced by the actively involved stakeholders (Bishop & Davis, 2002). In this thesis, participation is viewed as the collaboration between stakeholders that have no specific expertise in the project and the experts during the assessments and decision-making process.

2.6.2 The reasoning behind stakeholder participation

In the classical decision-making process, technical experts were appointed by the officials in order to help them in making decisions which are recognized as "scientific decision-making" (Creighton, 2005). Another viewpoint as mentioned by Mayer (1997), the classical model uses the premise of rationality and pinpoints the technical knowledge in decision-making. Consequently, in such model, scientific knowledge is much more favourable in comparison to the perspectives from relevant stakeholders.

Nevertheless, Creighton (2005) questioned whether delegating the decision to the scientifically skilled experts is sufficient to apprehend the interests of the stakeholders or otherwise to recognize what is the righteous decision for public. Creighton (2005)also asserted that it is problematic if the experts need to opt between two values since the issue becomes which value is more important for the society, thus technical knowledge may be used for information but not for deciding this kind of value choices. On the basis of that, participation can enhance the stakeholders' influence in the decision-making process by assuring that dialogue among stakeholders are held and their perceptions are being considered prior to the final decision (Creighton, 2005). Furthermore, in his paper, Fiorino (1990) had two arguments that support the implementation of participation. The first is a substantive argument. Lay people may see the problems and solution in different perspectives. Integrating their input can potentially complement the experts' knowledge. The second is an instrumental argument. It emphasizes the contribution of lay people that may make the decision more legitimate.

Another perspective from Mayer (1997) who argued that there are four models of policy analysis as the foundation of the participatory process can be explained as follows. The first model is **pluralist.** The main argument of participation in pluralist model is scientific and stakeholder consensus. Scientific data, methods, and results need to be verified from the point of views of varied stakeholders. Hence scientific consensus should be the basis of recommendations. While on the basis of democracy, stakeholder consensus is required for having a compromise between stakeholders and interest groups in order to acquire attainable policy advice. Second is **critical** model. This model emphasizes the need for participation by engaging communication and 'societal interaction' with public (citizens) in order to reach consensus on standards and values concerning complex problems. The third model is **constructivist**. In this model, participation is characterized by a process of social learning where 'ongoing interaction' between involved stakeholders is expected to improve their perceptions in a com,plex problem. The last one is **strategic** model. This approach describes decision-making process as an arena where strategic actors try to seek coordination and cooperation.

2.6.3 Benefit of stakeholder participation

Based on several scholars, the benefit of stakeholder participation can be categorized as follows.

Table 2- The benefits of stakeholder participation

No	Benefit	Explanation
1	Influencing decisions	• Provision of information It is necessary for decision makers to provide detailed information regarding proposed project to relevant stakeholders. O'Faircheallaigh (2010) argued that providing information may be crucial as a prerequisite for getting information from other stakeholders to decision makers and securing the implementation of projects. • Filling information gap In most of the impact assessment, decision makers need to make predictions of impacts and risks that related to several developed alternatives. Thus, stakeholder participation is important to gain information regarding values of affected stakeholders. • Information contestability Information contestability is crucial to obtain wide range information from different perspectives of people. It avoids domination of one single perspective to assess impacts of particular projects.

		• Better quality decisions Better decision can be achieved when different knowledge from varied stakeholders consolidated during the consensus (Von Korff, Daniell, Moellenkamp, Bots, & Bijlsma, 2012).
2	Acceptance of the decision and increase of the support	Considering stakeholders' values will likely increase the acceptance of the decision and avoid opposition (Von Korff et al., 2012)
2	Problem solving and social learning	Stakeholder participation can be a media for problem solving to address problems by sharing information, ideas, concepts and solutions among stakeholders (O'Faircheallaigh, 2010). Social learning could be achieved by working together with relevant stakeholders and allowing contribution of ideas and possible solutions and also can be a lesson learnt for dealing with future problems. Social learning through deliberation among stakeholders also creates common values and understanding, thus sustainable development planning can be obtained (Glucker et al., 2013).
3	Conflict resolution	Complex problems always include different perspectives and interests, thus conflict among stakeholders is something that cannot be avoided. Stakeholder participation is believed to prevent opposition and help to support the implementation of the project.
4	Legitimacy	According to Glucker et al. (2013), without involving the public in the decision-making process, the result can be considered as illegitimate. It is important to be noted that stakeholders' perspectives should be taken into account to influence policy, thus the decision-making process can be said as legitimate. Furthermore, the legitimacy of a decision-making process may also increase public acceptance of the project and its outcomes
5	Enhance democratic capacity	From democratic perspectives, participation is considered as citizen's rights and obligation to influence government's decision-making process. O'Faircheallaigh (2010) implies that this can be a learning process for the citizen by allowing them to understand others' interests and sharing the decision power with the appointed governments.
6	Empower marginalized individuals or groups	Empowering marginalized individuals or groups is related to the distribution of power within society that can be assumed unevenly distributed (Glucker et al., 2013).

2.6.4 Degree of participation

The degree of participation has been explored by many authors. For instance, Arnstein (1969) categorized the types of participation into 8 levels based on the power of public to influence the

decision. IAP2 (2007), the international association of public participation, also gave general guidance of participation degree corresponding to the increasing level of public impact as follows: inform, consult, involve, collaborate, and empower. Meanwhile, Mostert (2003) presented a review of participation level from the lowest level, information supply, which does not need the active involvement of the public to the highest level, decision-making, in which public has the power to make a decision.

Table 3 - Degree of participation based on (International Association for Public Participation, 2007; Mostert, 2003)

	Degree of participation	Description
1	Inform	- The basis of participation - one-way communication to the public - the public gets access to information
2	Consult	- The views of public are sought - To acquire public feedback on analysis, alternatives and/ or decisions
3	Involvement/ Discussion	- To work directly with the public throughout the process to ensure that public concerns and aspirations are consistently understood and considered - Real interaction takes place between the public and decision-maker
4	Co-designing	The public takes an active part in developing policy or designing project
4	Collaborate/ Co-decision making	The public shares decision-making powers with government
5	Empower/ Decision-making	- To place final decision-making in the hands of public - The public performs public tasks independently

2.6.5 Evaluation criteria for stakeholder participation

Several studies discussed the evaluation framework for stakeholder participation in order to assess the implementation of participation practice. Rowe, Marsh, & Frewer (2004) proposed criteria of participation evaluation that can be divided into two types, the acceptance and the good process aspects. Other authors, for example,Reed (2008) identified the features of best practice participation specifically in environmental decision-making. Meanwhile, Hartley & Wood (2005) highlighted the importance of Aarhus convention to be translated into

participation practice evaluation criteria. From those three literatures, the criteria of participation evaluation can be presented as follows:

a. Representativeness
   - "The participants should comprise a broadly representative sample of the affected population" (Rowe et al., 2004).
     - Stakeholders
     - Selection
     - Participant's role
     - Commitment
     - Actual representativeness
   - "Relevant stakeholders need to be analyzed and represented systematically" (Reed, 2008)

b. Independence
   - "The process should be conducted in an independent (unbiased) way" (Rowe et al., 2004)

c. Early involvement
   - "The participant should be involved as early as possible in the process, as soon as value judgments become salient" (Rowe et al., 2004).
   - "Where relevant, stakeholder participation should be considered as early as possible and throughout the process" (Reed, 2008).
   - "The public concerned shall be informed, either by public notice or individually as appropriate, early in an environmental decision-making procedure, and in an adequate, timely and effective manner, inter alia (2)" (Hartley & Wood, 2005).
   - "The public participation procedures shall include reasonable time-frames for the different phases, allowing sufficient time for informing the public (3)" (Hartley & Wood, 2005)

d. Influence
   - "The output of the procedure should have genuine impact on policy" (Rowe et al., 2004)
   - "Each Party shall ensure that in the decision due account is taken of the outcome of the public participation (8)" (Hartley & Wood, 2005).
   - "Local and scientific knowledge should be integrated"(Reed, 2008).

e. Transparency
   - "The process should be transparent so that the relevant population can see what is going on and how decisions are being made" (Rowe et al., 2004)

f. Resource accessibility
   - "Public participants should have access to the appropriate resources to enable them to successfully fulfill their brief " (Rowe et al., 2004).
     - Information resources
     - Human resources
     - Material resources
     - Time resources
   - "The public concerned shall be informed, either by public notice or individually as appropriate, early in an environmental decision-making procedure, and in an adequate, timely and effective manner, inter alia (2) " (Hartley & Wood, 2005).
   - Each Party shall require the competent public authorities to give the public concerned access for examination, upon request where so required under national law, free of charge and as soon as it becomes available, to all information relevant to the decision-making referred to in this article that is available at the time of the public participation procedure, without prejudice to the right of Parties to refuse to disclose certain information… (6)(Hartley & Wood, 2005).
     - Accessibility—The public has access to all documentation relevant to the decision-making process
     - Information provision— The public is informed where material relevant to the decision-making process can be obtained.

In this chapter, literature which includes the theory of stakeholder, decision-making process, values, methods for dealing with value conflicts, and stakeholder participation are explained. These theories are beneficial to help answering the research questions which have been formulated in chapter 1. The stakeholder theory gives an understanding about the importance of stakeholder involvement in decision-making process. The decision-making theory explains the use of round model to study the decision-making process and the interactions among actors. The importance of articulating values of stakeholders in a multi-actor decision-making process and multiple conflicting values which are something unavoidable in many complex decision-making processes are also described. In order to deal with value conflicts, the available methods are elaborated in this chapter. The approaches can be divided into two categories, which are optimizing and non-optimizing approaches. Furthermore, the theory of stakeholder

participation is explained in more detail. In chapter 3, the literatures explained in this chapter would be the basis to help structuring the step-by-step research approaches.

3

Research Approach

The research approach delineates the overall procedures and methodologies to answer the research questions. In chapter 1, the research problems and questions have been identified and formulated. The research is then continued with the second step which is literature studies. These studies are conducted to find the theories for effectively dealing with the research problem mentioned in chapter 1. Based on the research questions, the main problem which need to be solved is how to mitigate value conflicts in large infrastructure project in Indonesia using existing expert methods and stakeholder participation plan. To answer this main problem, literature studies on the importance of stakeholders in decision-making process, the theories for reconstructing decision-making process, values and value conflicts, the expert methods for mitigating value conflicts, and the stakeholder participation are completed. These studies would be the basis for the analysis in the next stage. Based on the previous chapters, this chapter is divided into several sections to elaborate in more detail the step by step approaches to finally answer the main research questions.

3.1 Data collection

The first stage of data collection begins with an exploratory document analysis which derived from the internet about the project. After conducting document analysis and obtaining all literature studies, list of questions for interview are formulated. The next step is setting up a face-to-face interview with two Dutch consultants who directly participated in the project. The document analysis and interview are done in advance to get better understanding of the project and the information regarding the stakeholders involved in the project.

In the second stage of data collection, the newspaper articles are collected to get more information pertaining to the opinion of stakeholders. Additionally, the official public reports issued by the National government were used as additional sources. A sample of 401 national newspaper

articles was selected based on the number of issues related to the NCICD case. The articles were retrieved using the keywords of "giant sea wall" and "NCICD". The newspapers were selected from a time period of 57 months; from January 2011 to September 2016.

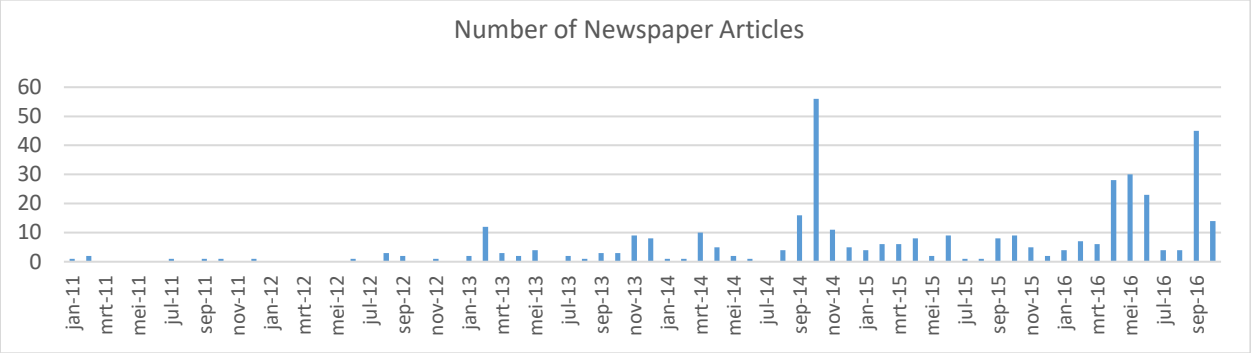

Figure 3 - The number of newspaper articles

The overview of the selected newspapers and their frequency is presented in figure 5.

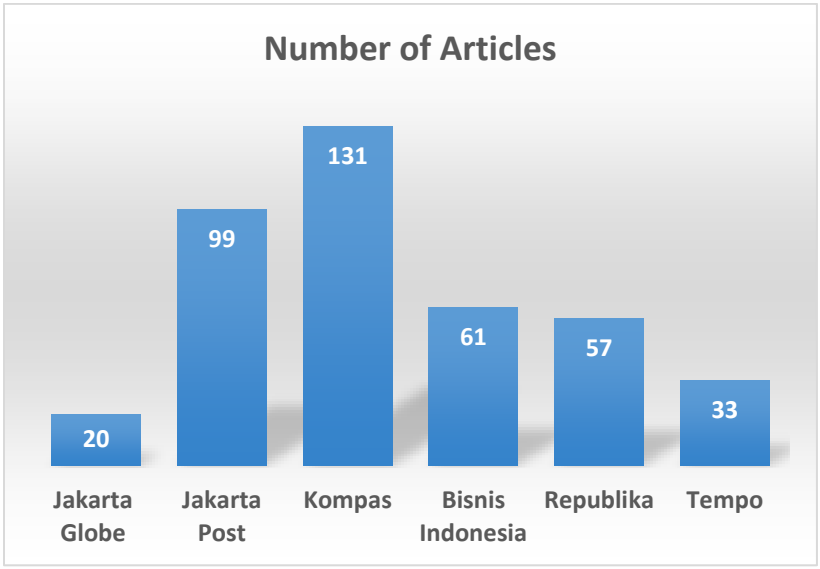

Figure 4 - The overview of the selected newspapers and their frequency

From 401 articles related to North Jakarta Coastal Defence project, purely informational material and duplicate articles were removed, resulting in a total of **243** articles that will be used for the analysis in this thesis.

3.2 Data analysis

3.2.1 Stakeholder analysis

In order to answer the main research question, the first step that needs to be conducted is stakeholder analysis. The stakeholder analysis can be used as a tool to map the stakeholders involved in the project and their relations in the network. In addition, this research tool is useful to grasp the interests, perceptions, and the resources of related stakeholders. The identification of stakeholders becomes an important step in this research because in an ideal policy-making process, the stakeholders with production power, blocking power, and diffuse power, should be involved in the process. Thus, the stakeholder analysis is necessary to identify which stakeholders should be involved in the process and their initial positions toward the project. This analysis is also beneficial to do further value elicitation which has the objective to understand the values held by the stakeholders and the possible value conflicts among the stakeholders.

After document analysis and interview are completed in the data collection stage, the initial list of stakeholders is constructed. The stakeholders listed are then structured by categorizing them into several groups. In this case, it is divided based on the stakeholders' role and position in a governance system (as explained by Enserink et al., 2010).

After the stakeholders are categorized, the second stage of the analysis is assessing thoroughly the interests, perceptions, and important resources of all key stakeholders. The additional data used in the analysis are gathered from different sources, mainly from the stakeholders' webpage, electronic media, and the reports of stakeholders and related project. The stakeholder analysis is an iterative process; therefore, the values of the stakeholders are also identified from the value identification stages. This stakeholder analysis is conducted in parallel with the value identification stage which will be explained in the next section.

3.2.2 Coding text

As mentioned in the previous section, newspaper is the main source of data in this research. Newspaper is selected as the source for further analysis because the claims and arguments given by the stakeholders and the actions taken by the stakeholders reported in the media can depict the discourses and interactions among stakeholders during the decision-making process. Furthermore, the values held by the stakeholders and the underlying issues can be identified from the media.

After selecting 243 articles that have relation to NCICD project, the next step is attaching codes to the information or text in the media containing arguments and actions taken by the stakeholders during decision-making process. Coding in this research is used to help categorizing data into thematic aspects which can be attained from the theory or adjusted to the information

of the empirical text (Glaser & Laudel, 2013). After data collection, subsequently a qualitative content analysis needs to be conducted. In this research, the arguments/ actions of the stakeholders in the media are coded into several categories which contain:

(i) the time dimension when an argument or action is reported.
(ii) the actor who expressed the arguments or involved in an action (name, type)
(iii) classifying the text into arguments or actions
(iv) the scope or subject of the expressed arguments

A spreadsheet is then created to arrange the coded texts into several categories. The following table is the example of the spreadsheet with the categories explained above.

Table 4 - Example of spreadsheet table for coded texts

NR	CODE	MEDIA MASS	TIME	TYPE (CLAIM/ ACTION)	TEXT	SUBJECT	ACTOR	VALUE

Coding the text is the initial step of data analysis process. This step would be beneficial for the next two analysis stages which are the reconstruction of decision-making process and the value identification process.

3.2.2.1 Reconstruction of decision-making process

Coding the text which is completed in the previous stage is the initial step of reconstructing the decision-making process. As explained in the previous subsection, coding the text includes classifying the text into actions and recording the time when the actions occurred. These activities would be essential to help reconstructing the decision-making process. This thesis uses the theory of decision-making in network to be able to study the complexity of the process and how the interactions of various stakeholders in different arena would affect the outcome of decision-making process.

The following text from the selected newspaper will be used for the example of coding texts for reconstructing the decision-making process:

"The People's Coalition for Fisheries Justice Indonesia (KIARA) held protest action in Bundaran Hotel Indonesia against the construction of Giant Sea Wall."

The text above is classified as action taken by one of the stakeholder groups which can affect the decision-making process of NCICD plan. As explained in the subsection 3.2.2, these are the following steps of text coding:

(i) the time dimension when an argument or action is reported.
The first step of text coding is coding the time dimension when the action is reported. The newspaper is issued on 28 October 2014, therefore this text is coded as **TIME_18_October_2014.**

(ii) the actor who expressed the arguments or involved in an action (name, type)
The second step is identifying the actors who involve in an action and categorizing the actors into which groups that they belong to. Thus, the identified actor from the text can be coded as **ACTOR_NGO_The People's Coalition for Fishery Justice (KIARA)**.

(iii) classifying the text into arguments or actions
The third step is classifying the text into arguments or actions. The example text is classified as action, then the text is coded as **ACTION.**

(iv) the scope or subject of the expressed arguments or actions.
The last step is determining the scope or subject of the action taken by the actor. For the text above, the scope of the action is NGO action. The text is coded as **EVENT_NGO Action_Protest**

After all of the texts are coded, there will be series of events which are then used to build rounds model to depict the NCICD decision-making process along the time. According to Teisman(2000), the decision-making process involves various actors who will suggest their own perspectives and possible solutions. During the process, it is possible that each round has different arena involving the interaction of many actors which will determine the outcome of the process. The analysis focuses on the actors involved, interaction of actors in different arena, their perspectives through the course of decision-making process, and decisions made in separate rounds. This analysis is also useful to know the stakeholder who participate in decision-making process. Furthermore, the analysis concludes with more insightful analysis using the characteristics of networks in the available literature (Koppenjan & Klijn, 2004; J. A. De Bruijn & Heuvelhof, 2008; H. De Bruijn & Leijten, 2007). The analysis would be valuable for giving the insights for the government on managing the complexity of decision-making process.

3.2.2.2 Identification of values

Dignum et al. (2015) proposed methods which are principally centered around the arguments set forth by diverse stakeholders. They attempt to point out the values at stake from the perpetual debate between proponents and opponents of the project by analyzing their arguments in the public arena. There are essentially three steps of identifying values at stake from public debate presented in their paper, i.e. (i) analyzing key documents from various stakeholders involved; (ii)

analyzing the arguments in the selected documents by means of value hierarchy concept (van de Poel, 2013); (iii) deriving values from the referred arguments (Dignum et al., 2015).

In the following sections, each step will be comprehensively described in relation to the NCICD case.

1. **Analyzing key documents**

   The key document used in this research as explained in data collection stage is newspaper. This method uses the arguments or debates in public arena to identify the value at stake. Therefore, the mass media is an important means to examine the views of various stakeholders and subsequently study their values at stake.

2. **Analyzing arguments using value hierarchy concept**

   In his paper, van de Poel (2013) proposes the concept of value hierarchy which consists of three levels, i.e. values, norms, and design requirements. The upper level of the hierarchy is values, for example, environmental sustainability, safety, identity, etc. The middle level is norms. Norms represent "properties" or "attributes" that constitute the values. Norms might comprise ***objectives*** (for example "minimize cost" without specific target), ***goals*** that stipulate more specific target, and ***constraint*** that specify "boundary or minimum conditions". At the bottom level, more concrete design requirement can be found.

   Dignum et al. (2015) suggest that the arguments presented in the public debate can be considered as norms in the second layer of value hierarchy. They argue that those arguments contain "normative statement" pertaining how the project should be. Thus, the values that held by the stakeholders can be identified from the arguments in public debate. Figure 5 illustrates different layers of value hierarchy and the position of arguments in the hierarchy.

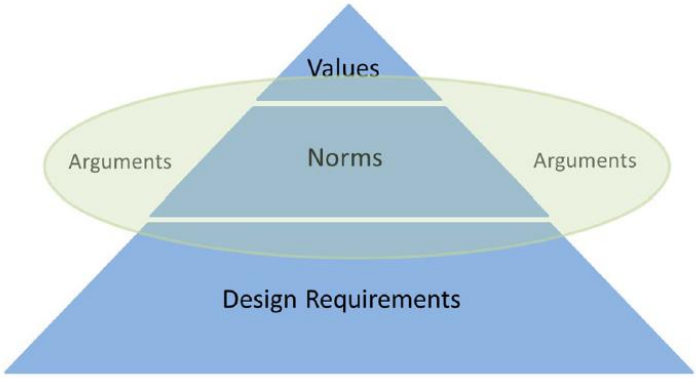

Figure 5 - The position of arguments in value hierarchy (Dignum et al., 2015, adapted from van de Poel, 2013)

3. **Deriving key values**

   Lastly, the values are then identified from the indicated arguments. The values used in the analysis are derived from several literature on ethics in different field of topic, ranging from water management to information system (Dignum et al., 2015; Friedman & Kahn Jr, 2002; Friedman, Kahn Jr, Borning, & Huldtgren, 2013; Hall, Ashworth, & Devine-Wright, 2013; Ravesteijn & Kroesen, 2015; Taebi & Kloosterman, 2015) as can be seen in Appendix A.

The process of text coding for value identification will be presented in the following paragraph. The following text from the selected newspaper will be used for the example of text coding for value identification:

"He said damage to mangrove forests and coral reefs would cause larger ecological disasters, such as the disappearance of fish in northern Jakarta waters and the decline of maritime tourism potential from a damaged marine environment and abrasion at Banten Bay and along the northern Java coast due to ongoing sand mining for the reclamation"

The text above is classified as argument claimed by one of the actors which can affect the decision-making process of NCICD plan. As explained in the subsection 3.2.2, these are the following steps of text coding:

(i) the time dimension when an argument or action is reported.
   The first step of text coding is coding the time dimension when the argument is reported. The newspaper is issued on 15 October 2014, therefore this text is coded as **TIME_15_October_2014.**

(ii) the actor who expressed the arguments or involved in an action (name, type)
   The second step is identifying the actors who express the argument and categorizing the actors into which groups that they belong to. Thus, the identified actor from the text can be coded as **ACTOR_NGO_The People's Coalition for Fishery Justice (KIARA).**

(iii) classifying the text into arguments or actions
   The third step is classifying the text into arguments or actions. The example text is classified as arguments, then the text is coded as **CLAIM.**

(iv) the scope or subject of the expressed arguments or actions.
   The last step is determining the scope or subject of the argument expressed by the actor. For the text above, the scope of the argument is NCICD impact. The text is coded as **SUBJECT_NCICD_Impact: Negative.**

Following the stage of text coding, the texts classified as arguments would be further analyzed to apprehend which values are held by particular stakeholders. The values which are previously derived from several literatures are used as the references in deciding the values which fits the

best with the arguments presented in the media mass by the stakeholders. For example, there are several keywords which can be identified from the above example text, i.e. **damage to mangrove forests and coral reefs, larger ecological disasters, the disappearance of fish, damaged marine environment, abrasion,** and **the decline of maritime tourism**. Several keywords that can be found in the text, i.e. **damage to mangrove forests and coral reefs, larger ecological disasters, the disappearance of fish, damaged marine environment, abrasion,** can be identified as **environmental value**. While **the decline of maritime tourism** can be categorized as economic value. The conflicts arisen in NCICD plan project are then analyzed to find the possible value conflicts which need to be mitigated to achieve a sustainable development planning.

3.2.3 Identification of value conflicts

In the reconstruction of decision making process part, the history of the NCICD plan would be explained in detail. Hence, the reasons why the plan was initiated will be explored. These reasons would be the basis to identify the main values offered by the NCICD plan. After that, the stakeholders' values with regard to the plan are identified. As already explained in subsubsection 3.2.2.2, the values are identified from the arguments of the stakeholders regarding the NCICD plan. These arguments are the results of the project plan which might clash with their values. Therefore, the value conflicts in this research are based on the conflicting values between the main values offered by the NCICD plan and values of the stakeholders which get affected or will get affected due to the implementation of the project.

3.2.4 Approaches on how to deal with conflicting values using expert methods and participation method

The literature studies found that the stakeholder participation could be of help to make a project better implemented. For example, the involvement of relevant stakeholders in decision-making process would lessen the resistance of stakeholders toward a project or increase the acceptability of a project. Moreover, the possibility of getting support from different stakeholders will be much higher because their perspectives are considered during decision-making process.

After analyzing competing values in NCICD case, the suggested approaches of expert methods to mitigate these conflicts would be presented. In a complex decision-making process in which many stakeholders' interests are involved, engaging experts with the technical knowledge is indeed necessary to obtain a well-grounded decision. However, to answer the question of which value is more important to society, the relevant stakeholders, including lay people, need to be engaged since they may see the problems and solutions from different perspectives. Hence, their knowledge would complement the technical knowledge given by the experts. Therefore, after finding the value conflicts, the expert methods to mitigate these conflicts are recommended with

the incorporation of stakeholder participation methods in which the right stakeholders are targeted to be involved in the expert method process.

The suggested approaches given would include the suitable expert method to mitigate value conflicts by assessing the issues arising for each value conflict. After selecting the best method to deal with competing values, the step by step expert method implementation will be explained in detail. These steps also include the recommendation of stakeholders who should be participated in the process and the suitable level of participation. The stakeholder analysis, analysis of actors' interactions in decision-making process and the identification of value held by stakeholders are used as the basis of selecting the stakeholders who should be included in the process and also the level of stakeholders' participation.

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4

The Stakeholders

In this chapter, stakeholder analysis that relates to NCICD project is performed with the intention of mapping the stakeholders involved in this project and their relations in the network. This chapter starts with the brief introduction of flood problem in Jakarta and the controversy over Jakarta's Northern Coastal Area Development project. For the initial stage, the stakeholder analysis is conducted to map the stakeholders involved in the project. This analysis is essential to understand the interests and also perceptions of the specific stakeholders regarding the project. The definition of stakeholders used in this chapter, as already mentioned in subsection 2.6.1, is "any group or individual who can affect or is affected by the achievement of the organization's objectives" (as introduced by Freeman, 1984).

4.1 The History of flood problems in Jakarta

Jakarta has experienced severe inundation problems for decades. Several strategies have been adapted to overcome these perpetual flood problems; however, the solutions cannot completely dismiss the problems. The fact that Jakarta is located in a flat low-lying region accounted for 40% below sea level and intersected by thirteen rivers flowing through the city makes this region prone to flood disaster (Jha, Bloch &Lamond, 2012).

The long history of flooding in Jakarta can be traced back since the beginning of establishment of Batavia under Dutch colonialization in 1619. Since 1619 the canals system was built which resembled the city of Amsterdam (Caljouw & Nas, 2005). In 19th century, it was reported that flooding problems happened frequently, yet the government did not show some efforts to mitigate these problems and considerations were only taken when there were severe flooding problems (Caljouw & Nas, 2005).

In 1917, due to big inundation that happened two years earlier, the western flood canal was proposed by H. van Breen. This canal diverts Ciliwung river away from the city into the sea. Many mitigation plans were proposed in the twentieth century and some of the plans were realized. The proposal to build polder along the north coast was also put forward around that time but not executed.

In the 1970s, due to severe flooding submerged the city of Jakarta, Indonesian Ministry of Public Works assisted by Netherlands Engineering Consultant (NEDECO) developed the first Master Plan of Drainage System and Flood Control for Jakarta with the Eastern Flood Canal as the primary solution. However, this plan was delayed until 2002 when another immense flood event hit Jakarta.

In 21st century, several devastating inundation problems have occurred in Jakarta as depicted in figure 6. In 1996, flood events happened in Jakarta due to long duration and high intensity of rainfalls. The inundation depth is on average 1 to 2 meters and the high precipitation is associated to a frequency of 1000 years. Bigger flood event in terms of inundated geographical area occurred in 2002. This 2002 flood inundated nearly one fifth of the total Jakarta (Firman et al., 2011) and approximately 80 people were killed during that time. The flood negatively affected land and also air traffic. Around 80% of flights were delayed in Soekarno Hatta airport (Caljouw & Nas, 2005). In terms of economic value, the direct damage is approximately 5.4 trillion rupiah and indirect damage is estimated at 4.5 trillion rupiah (Caljouw & Nas, 2005). The immensity of this event triggered the authority to take action in order to reduce the severity of flood impact. Major rehabilitations and improvements were taken, including the beginning of Eastern Flood Canal construction that had been designed since 1973 (JCDS Agenda, 2011).

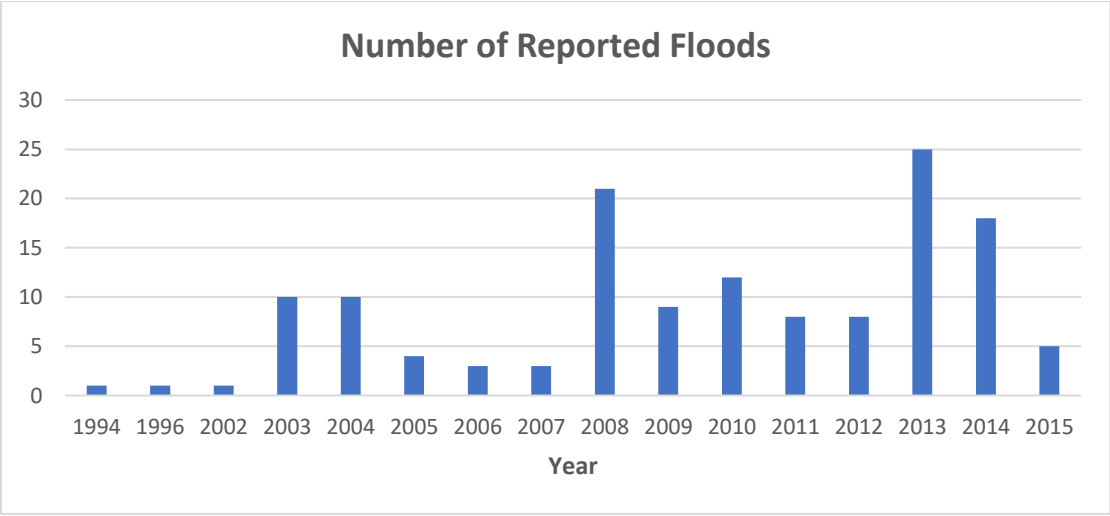

Figure 6 - Number of reported floods in Jakarta

In early 2007, the worst flood disaster since 2002 happened in Jakarta. After this 2007 flood, Jakarta Flood Hazard Mapping Framework was developed as part of Dutch assistance in order to understand the decisive causes of this flood event. In November 2007, flood hit Jakarta once again in the same year, however it was the result of high tide in the North coast. It is interesting to be noted that from the common perspective of people, floods in Jakarta are caused by rain or riverine conditions, thus the high tide induced flooding was unexpected (JCDS Agenda, 2011). Furthermore, Jakarta Hazard Mapping Framework also pointed out that land subsidence, even though not the direct cause of the 2007 flood, will give undesirable impact to the current sea defence of Jakarta as it will continue to sink below critical level. The expert report is also predicted that floods from the sea will happen more frequent in the future since the land subsidence which is primarily caused by groundwater extraction will continue to go down and the tide level will continue to rise (Brinkman and Hartman, 2007). Following the devastating flooding in North Jakarta, Indonesian government in cooperation with Dutch government conducted a project, namely Jakarta Coastal Defense Strategy (JCDS), which aims to prepare an integrated plan for not only protecting North Jakarta from the threat of flooding, but also solving the problem of water supply, polluted river, enormous traffic jam, and other urban problems. This project then became the basis of National Capital Integrated Coastal Development (NCICD) which will be explained in detail in the following sub-chapters.

4.2 The ongoing controversy over Jakarta's Northern Coastal Area Development Project

In the past, the North coast of Jakarta area had been long abandoned as the central administration and urban development were shifted to inland area of Jakarta where this area was considered safer from the peril of relentless flooding. Nevertheless, this coastal area of Jakarta has attracted the interest of developers since 1980s. Around this time the project to transform the coastal area into recreational beaches which are only accessible for paying users was begun targeting the middle and upper-class people. By that time, the reclamation project through land dredging was also executed in the area of Pluit shores in which the lavish housing complex for rich people called Pantai Mutiara was built. In the 1990s, targeting the upper-class people, other project was started in the coastal area of North Jakarta by famous Indonesian developer, Ciputra, converting mangrove forests in Kapuk area into another luxurious housing complex.

The opportunity to do further expansion of waterfront project was opened since the policy in the mid-1990s was shifted to renew the image of Jakarta as the coastal city. This was later legitimized by the stipulation of Presidential Decree No. 52 Year 1995 in the era of President Soeharto, confirming the intention to revitalize Jakarta into one of the waterfront cities in the world. This decree became the platform for the city government to develop Jakarta Bay and realize the

reclamation megaproject of North Jakarta in which, as stated by A.R. Soehoed, the idea of reclaiming Jakarta Bay was emanated from the previous achievement of private developers (e.g. Pantai Indah Kapuk, Pantai Mutiara, etc) in transforming the face of North Jakarta (Kusno, 2011).

The project which involves the reclamation of 2,700 Ha of sea along Jakarta's northern area became the public's target of criticism, particularly from the environmental groups and activists due to its destructive environmental as well as social impacts. However, it was not until the end of authoritarian era of President Soeharto that the public and the concern stakeholders began to strongly resist the idea of reclaiming the whole of Jakarta Bay. Following the controversy of the project, Nabiel Makariem, the then Indonesia's State Minister of the Environment, showed his disapproval regarding the reclamation project by issuing Ministerial Decree No. 14 Year 2003 which was decided after considering the recommendation from the assessment commission who has the responsibility to assess the Environmental Impact Analysis of the project (Nurbianto, 2003; The Jakarta Post, 2003). The conflict was once again arisen because the Governor of Jakarta at that moment, Sutiyoso, was quite persistent to go forward with the project, claiming that 'It (reclamation) is the only way for the city to expand land which is badly needed to support the fast growing city' and stressing that 'All the comments and statements from the ministers, experts and observers will only be treated as input for the implementation of the project' (Kurniawan, 2003; The Jakarta Post, 2003).

In 2007, six developers of the reclamation project won the lawsuit against Ministry of Environment. In 2011, the ministerial decree on the unfeasibility of North Jakarta reclamation project was revoked by the Supreme Court. However, the government of Jakarta was required to prepare Strategic Environmental Assessment because the previous Environmental Impact Assessment was inadequate to justify the implementation of the project. The project was delayed due to several regulations which need to be met by developers. The Presidential Regulation No.122/2012 was then issued, endorsing the developers to grant the permit from the Governor of Jakarta for further implementing the project (Kompas, 2016).

In November 2009, the bilateral cooperation framework between the Government of Indonesia (GOI) and the Government of the Netherlands (GON), particularly in flood management sector, was projected by the National Development Agency (Bappenas) to deliver a strategic plan for the coastal defence and management of Jakarta, which is called the Jakarta Coastal Development Strategy (JCDS), as a response of massive flooding event in 2007. JCDS which is then called NCICD in the later stage includes the construction of sea wall and land reclamation project which sparks more criticism towards the project. Thus, the controversy over Jakarta's Northern Coastal Area Development project is fueled even more because of NCICD project. To have deep

understanding about the conflicts, the stakeholder analysis is essential to be conducted in the initial stage. The analysis is performed in the next section.

4.3 Stakeholders identification

Identifying stakeholders who can either affect or affected by the project is essential in order to do further value elicitation. The identification was carried out by iteratively drafting the initial list of stakeholders involved. The stakeholders listed were then structured by categorizing them into several groups. In this case, it was divided based on the stakeholders' role and position in a governance system (as explained by Enserink et al., 2010).

In this section, the interests, perception, and important resources of all key stakeholders are assessed thoroughly. The references used in this section were gathered from different sources, mainly from the stakeholders' webpage, electronic media, and the reports of stakeholders and related project.

4.3.1 Responsible authorities

The main Indonesian governmental bodies that directly involved in the project are Coordinating Ministry for Economic Affairs, State Ministry of National Development Planning (BAPPENAS), Ministry of Public Works, and the Provincial Government of DKI Jakarta. The Coordinating Ministry for Economic Affairs has the coordinating role in the planning phase of the project. Under this coordinating role, the linkage between economic interests and water safety have been created (van der Kerk, Andrea, Westerweel, Havekes, & Teeuwen, 2013). Furthermore, the Coordinating Ministry for Economic Affairs has finalized the Masterplan for Acceleration and Expansion of Economic Development of Indonesia (MP3EI) which can be considered as guidance for Indonesia to become one of the world's developed countries by 2025. In the master plan, DKI Jakarta is regarded as one of the drivers for national industry and the main centers of economic activities, therefore any economic development plan of DKI Jakarta should be in concordance with the MP3EI. (Coordination role)

On the other hand, BAPPENAS has the formal authority to formulate national development plan and budget and also coordinate international development cooperation. BAPPENAS has an important role in this project, considering that NCICD plan is a national-scale project and carried out under bilateral cooperation framework with the Government of the Netherlands. Furthermore, recently the President of Indonesia gives a mandate to BAPPENAS to comprehensively assess and improve the plan, so that this plan can be implemented by emphasizing the importance of environmental and social aspect, especially the impact that will

be experienced by the fishermen. The president also underlined that this project should be in compliance with the appropriate legal and regulatory framework. (Planning role)

For the coordination role in the implementation stage of the project, Ministry of Public Works and Housing and The Provincial of DKI Jakarta have a shared responsibility. In general, Jakarta flood management system is managed by Ministry of Public Works and Housing and The Provincial of DKI Jakarta. After the decentralization law, Law on Regional Government No 22/ 1999, was stipulated, the functions and responsibilities of the central government, including in water sector, were shifted to the regional government. Therefore, Jakarta flood management system which is located within the boundaries is managed by the Provincial of DKI Jakarta, while the Ministry of Public Works is responsible for the flood management system which is located cross provincial boundaries.

In the context of NCICD project, Ministry of Public works has the interest to provide an integrated long-term solution for flood prevention, land subsidence mitigation, clean water provider, water pollution control, and residential revitalization since the condition of Jakarta has been heavily impaired. Meanwhile, for the Provincial of DKI Jakarta, protecting Jakarta citizen and the coastal area from the threat of flooding is the major interest. Furthermore, increasing the environmental quality, including water quality, in order to support the social, economic, and other activities in Jakarta is also another important interest for the government of Jakarta. However, both of the government do not have adequate financing for new flood management infrastructures (Piet, 2012). Due to this financial constraint, they have similar interest to get funding for flood protection from land reclamation and other sources of revenue (Coordinating Ministry for Economic Affairs, 2014a).

In terms of resources, the Provincial of DKI Jakarta has the formal authority in formulating policy and regulation in relation to Jakarta development. Having this formal authority, the policy regarding the development of North Jakarta coastal area has been addressed for quite a long time. The provincial government has formulated reclamation policy in North Jakarta that has an intention to transform this city into a waterfront city. In addition, the provincial government has issued legal instrument as a basis for this policy (i.e. Local Regulation No 1/ 2012 on Regional Spatial Plan 2030 and Gubernatorial Regulation No 121/ 2012 on Spatial Plan for North Jakarta Coastal Area Reclamation). The NCICD plan is a separate project from the reclamation project, however, the intention of both project is quite similar which is said to protect the coastal area of North Jakarta and accommodate the future development of Jakarta.

4.3.2 Other government regulators

Ministry of Environmental has the interest of environmental conservation and protection. Concerning the NCICD plan, the ministry has to ensure that this project complies with the environmental regulation. It is related to its resource which is to issue or cancel the permits for the project by assessing its environmental impact assessment document as a prerequisite for commencing a project prepared by the project proponent. The ministry also has the authority to monitor the implementation of Strategic Environmental Assessment (KLHS) which is an obligatory process in the development of policies, plans or programs that have the potential to cause environmental impacts. This process has the objective to guarantee that the principles of sustainable development have been incorporated into the plans.

Another ministry that is crucial in this project is Ministry of Maritime Affairs and Fisheries. The ministry's involvement is closely related to the concern of this ministry regarding the harmful consequences of the project to the vulnerable communities and also maritime ecosystem around the coastal area who will be most affected by the project. Following the NCICD plan, the research body of Ministry of Maritime Affairs and Fisheries conducted a study on the potential impact of the project. The result of the study concludes that this project would have substantial social-economy, cultural and physical impacts on the coastal area which include disappearance of historical islands due to sea current affected by sea wall, the livelihoods transformation of the affected communities, and also damage to the maritime ecosystem (Elyda, 2015; Poernomo et al., 2015). Moreover, the recent appointed Minister, Susi Pudjiastuti, who is well-known as the most vocal ministries in the current cabinet, can be considered as a significant actor who might have a strong influence in the current and future decision-making process of this project.

In the last stage of NCICD plan, the potential deep-sea port and new offshore airport development in the eastern part of Jakarta Bay are taken into consideration. Thus, the stakeholders who are in charge of this development need to be involved. In central government level, Ministry of Transportation has the authority to govern and regulate the transportation sector in Indonesia. For this reason, it is necessary for NCICD plan to be synchronized with the existing or forthcoming policy by the Ministry of Transportation regarding sea port and airport development.

Additionally, massive investment is required for financing flood control system in NCICD plan. Realizing this issue, generating revenues from the urban development project to support flood protection infrastructure is one of the objectives of the plan (Coordinating Ministry for Economic Affairs, 2014a). The plan is to use the combination of financial sources from public funding and revenues generated from private developers. However, the funding scheme has not yet finalized.

Thus, the involvement of Ministry of Finance to assess the financial feasibility of the project and discuss an innovative funding scheme is necessary.

4.3.3 Affected communities

NCICD plan will gravely affect the communities along the coast – most of them are fishermen. The fishermen communities have the interest to be able to continue fishing as their main income. Furthermore, living in their current settlement is also their interest because it is in close proximity to the sea and other supporting fishing facilities. However, the plan will strongly disrupt fishing activity which is the main source of the economy for fishermen. The reason is that the construction of sea wall will potentially hinder the fishermen to have direct access to the sea. In addition, this wall will transform the existing salt water into fresh water retention lake, hence the fishermen need to go further into the sea, otherwise, fisheries production may decline. As a result, the fishermen communities have the perspective that this plan will threaten their livelihood, including loss of employment and also their settlement. In the decision-making process, the affected communities have little power to influence a decision; nevertheless, they may have a strong influence on Ministry of Fisheries and Maritime Affairs and also fishermen associations.

Similarly, sea shell farmers also have the interest to have a living. Sea shell has been an important marine product of Jakarta Bay for a long time and it is considered of having high economic value (Coordinating Ministry for Economic Affairs, Special Capital Region of Jakarta, National Development Planning Agency, Ministry of Public works, & Government of Netherlands, 2014). The implementation of NCICD plan will cause the farmers losing their cultivation area and the production will then decrease. Moreover, the authority of Jakarta has been banned the farmers from harvesting sea shell due to bad heavy metal contamination in Jakarta Bay from industrial and residential waste (Putri, Prasetyo, & Arifin, 2012).

Along the fishermen neighborhood, small processing industries exist. Increasing profit and long-term continuity of business are their major interest. As described in the previous paragraph, NCICD plan will disrupt fishing activities in Jakarta Bay. The industries rely on fish supply provided by the fishermen, consequently, it will disturb their production and decrease of revenues may happen. In addition, relocation of fishing landing site may increase their cost of production.

4.3.4 NGO

Environmental NGO and fishermen association are amongst the people who are strongly against the NCICD plan. They mostly express their opinion regarding the plan through media mass, thus it may have an effect on the perception of lay people. Environmental NGO, one of them is The Indonesian Forum for Environment (Walhi), is consistently opposed the idea of the sea wall and

land reclamation that included in NCICD plan for the reason that the plan will have a massive environmental impact, for example, degradation of mangrove ecosystem which presently has been in critical condition. According to Walhi, instead of spending on investment in NCICD plan, the government needs to focus on coastal ecological and environmental rehabilitation (Tambun, 2013).

Furthermore, NCICD plan is also gained substantial criticism from the fishermen associations, with the claim that the plan will significantly hamper the livelihoods of fishermen and other vulnerable communities and also threaten the existing sea biota. Data and Information Center of the People's Coalition for Fisheries Justice Indonesia (KIARA) indicates several issues that may occur as a result of the construction of sea wall (KIARA, 2014):

1. Public consultation
   The fishermen are not actively informed and involved in the planning stage of the project. KIARA predicts that the implementation of the project may create social conflict and resettlement of about 16,855 fishermen.
2. Environmental degradation
   This project is believed to worsen the environmental pollution in Jakarta Bay and also harms the remaining mangrove ecosystem and coral reef. Degradation of the coastal ecosystem will have an adverse effect on the fish population. In turn, the fishermen will be pushed away into the sea to get more fish and it leads to more costly and risky fishing activities.
3. Access to resources
   The difficulty in accessing the natural resources in the coastal area by the coastal communities may exist because of the implementation of the project. KIARA raises the issue that women in the coastal area who are the backbone of the family will become more vulnerable because of this accessibility problem.
4. Fishermen relocation
   The solution to relocate fishermen communities to the new housing complex is not beneficial for the fishemen. In addition, the solution of ship locks in the outer sea wall for fishing activities may disrupt marine habitat in the North of Jakarta. KIARA argues that fishermen are not able to live away from the sea. The relocation of fishermen into the new housing complex is the same as the eradication of their fishing culture.
5. Pollution
   There is still no comprehensive study regarding the environmental impact. According to KIARA, this project will give more harmful impact (e.g. environmental pollution) than beneficial impact (e.g. clean water supply).

Despite their lack of power in the formal decision-making process, this group of stakeholder has the resources that can not be overlooked . These NGOs have the knowledge on taking legal action againts the project. Taking the example of a recent case of a land reclamation project in North of Jakarta, Indonesia fishermen association (KNTI) filed legal action against reclamation license on G island given by Jakarta Government to PT Muara Wisesa Samudra. The law suit based on the claim that the project does not have any public benefits and cause detrimental environmental condition has been won by the fishermen association.

4.3.5 Port authority

Situated in North Jakarta, the Port of Tanjung Priok is the Indonesia's international port hub that trans-ships about 50 % of cargo traffic in the country (Coordinating Ministry for Economic Affairs et al., 2014; IPC, 2016). In 2013, the cargo traffic of Tanjung Priok port is around 7 million TEUs, almost doubled the amount of cargo in 2008 (Coordinating Ministry for Economic Affairs, 2014a; Dodd, 2015). This condition creates a shipping congestion problem that multiplies the current problem of dwell time, as a result, time and cost needed are increased to handle the containers and in the end, it reduces the competitiveness of Tanjung Priok port. To alleviate these bottlenecks, the capacity expansion of this port is heavily required.

The state owned port operator company, recognized as PT. Pelindo II, has the responsibility to manage the operation of Tanjung Priok port, including the port development plan. Improving national logistics chains in order to enhance the industrial competitiveness and investment climate is the major interest of PT. Pelindo II. Particularly for Port of Tanjung Priok, this state owned company has the interest to increase the competitiveness of the port at international level and enhance the port productivity by being able to receive the largest container ships, which will trim down the costs needed for transportation and eventually will be beneficial for supporting national trade and economic activities. These interests were embodied by realizing massive port expansion in Tanjung Priok which is divided into three phases and is expected to be completed by the end of 2023.

According to NCICD Master Plan (Coordinating Ministry for Economic Affairs, 2014a), the port development plan is addressed in Phase C of NCICD plan by providing sufficient space for further expansion of Tanjung Priok port. However, crucial issues may emerge during the implementation of NCICD plan. The accessibility of the shipping activities may be disrupted if the outer sea wall will be implemented. In addition, sedimentation may happen because of the reclamation projects which can negatively affect shipping activities. Conducting a discussion with PT. Pelindo II is, therefore, important to be able to synchronize the NCICD and port development plan.

4.3.6 Private investors

Water safety is claimed to be the main interest of NCICD plan, however, the link between water safety and economic interests has been made by encouraging the participation of private investors which are expected to cross-subsidize the flood protection infrastructures. The land reclamation project proposed in phase B will be divided into 45 % for the buildable area and 55 % for infrastructures, recreational and public green spaces (Coordinating Ministry for Economic Affairs, 2014a). This 45 % of the buildable area is the primary source of funding and an area where private investments can be raised from the private investors. Following the plan, the private investors are obligated to build low-cost housing accounted for 17 % of the total buildable area. This may conflict with their interests which are to gain high profit and have long-term business continuity.

4.3.7 Other private companies

PT. PLN (Persero)

PT. PLN (Persero) is the state-owned government company that has a monopoly in electricity generation and distribution in Indonesia. This stakeholder has the main interest to supply electricity without any interference. Three power plants, viz. Muara Karang, Tanjung Priok, and Muara Tawar, which have the capacity of 1,670 MW, 2,052 MW, and 800 MW consecutively, are located near the proposed project area. These power plants are the backbone of the power supply in Jakarta. The project might disrupt the supply of sea water that functions as a cooling system for the power plant. This disruption might cause damage to the machine and outages will likely to occur.

Indonesian Association of Submarine Communication Cable System

This actor is the association who has the responsibility to keep the stability of communication in Indonesia. The plan has the possibility to hamper the submarine communication cable system. Thus, it may disrupt the communication access across the nation. Furthermore, it can decrease the interest to industrial investment and the national economic competitiveness in the global economy. Therefore, this actor is also important to be engaged in the plan.

4.3.8 Expert/ Research institutions

Opponent

Like all the other mega projects, NCICD has been deemed as a controversial project and drawn the attention of many groups of stakeholders, including the expert, researcher, or academia. Several of them strongly oppose the plan by declaring that the outer sea wall is not a solution for flooding and land subsidence problems – contrary to what the supporters of the project have

always said. Muslim Muin, Chairman of the Group of Ocean Engineering Expertise ITB, has blatantly shown his disagreement regarding this project through his writings in the media mass and his arguments in forum group discussions. Several concerns have been pointed out, for example along with the expensive operational and maintenance costs needed, the great sea wall requires a pump with the capacity of 1,100 cubic meters/ s. Sequentially, disruption of this pump will cause flooding problem in Jakarta (Florene, 2016).

Meanwhile, another researcher argues that flooding and land subsidence problems are instigated by rampant urban development which has converted water catchment areas into property developments. There is a risk that the water retention basin will become a "giant septic tank" with the current condition of 13 polluted rivers which flow into Jakarta Bay. In addition, the researcher also has a question on who will get the greatest benefit from land reclamation project that included in the plan. From the public perspective, there is a concern that only property developers and upper communities will get the benefit from this project.

Proponent

While the opponent of the project presents the negative impacts that might happen because of the project implementation, the proponent of the project has different perspectives. The proponent argues that the sea wall is important solution to prevent flooding. Furthermore, the land reclamation is needed because Jakarta cannot accommodate the population growth of Jakarta

4.4 Chapter conclusion

In conclusion, this chapter presents 8 categories of stakeholders who are relevant to be included in the decision-making process of NCICD plan. The following table summarizes the findings regarding stakeholders who are important in the decision-making process and their interests, perceptions, and important resources for this specific case.

Table 5 - The stakeholders and their interests, perceptions, and important resources with regard to NCICD plan

Stakeholder	Interests	Perception	Important resources
Responsible Authorities			
Coordinating Ministry for Economic Affairs	Development and coordination of policies that support the national economic growth	• The plan may give positive effect to the coastal area and also contribute to the socio-economic development of the capital city of Jakarta • Support the implementation of the Acceleration and Expansion of Indonesia Economic Development (MP3EI)	• Central position in the network (Coordinating the stakeholders within the project, and also synchronizing policy in the field of economics) • Formal authority
State Ministry of National Development Planning (BAPPENAS)	Preparing national development plan, including NCICD, which is considered as national scale project	The plan should be prepared comprehensively and implemented according to the norms and regulations and also paid attention to the environmental and social impacts.	• Central position in the network (planning national development and budgeting within inter-departmental sector, coordinating international development cooperation) • Formal Authority
Ministry of Public Works	• Provision of integrated long-term solution for flood prevention, land subsidence mitigation, clean water provider, water pollution control, and residential revitalization • Cost-recovery	The ecosystem integrity condition of Jakarta is heavily impaired; thus, long term measures need to be considered	• Formal Authority • Budget allocation
The Provincial of DKI Jakarta	• Giving protection to the Jakarta Coastal area from the threat of flooding and land subsidence • Increasing environmental quality in order to support the economic, social, and other activities in Jakarta. • Economic interest • Cost recovery	• The safety of the people of Jakarta is at stake • Economic losses because of permanent flooding • The condition of North Jakarta is vulnerable	• Formal Authority • Budget allocation

Other government regulators			
Ministry of Environment	• Environmental conservation and protection • Ensuring that the proposed project is complied with the environmental regulation and having the authority to issue the environmental permit	The project needs to be assessed thoroughly according to the environmental regulation	Issuing and cancelling environmental permit/ license for the project
Coordinating Ministry for Maritime Affairs	Planning and policy coordination, as well as synchronization of policies in the maritime affairs	• The new Minister supports the NCICD plan	• Formal authority
Ministry of Maritime Affairs and Fisheries	• Protecting the livelihood of the coastal communities • Protecting the biodiversity of species in the coastal area	• Physical, ecology and hydrodynamic impact of the project may harm the coastal area • Socio-economic impact to the people who live in the coastal area (e.g. the project may transform the livelihoods of project-affected communities in terms of economic sources and also cultural and societal aspects)	• Formal authority • Strong figure of minister
Ministry of Transportation	Harbour and airport development plan	• The land reclamation may hamper the accessibility of ships traveling to and from the port	• Issuing permit for land reclamation (for the purpose of harbor expansion) • Formal authority
Indonesian Science Institute (LIPI)		• Environmental degradation due to the project • Loss of occupation for the fishermen • Negatively affect the social and culture aspect of the coastal communities	• Formal authority • Research institution

Affected Communities			
Fishermen	• Being able to continue fishing • Having a living • Living in their current residential • Having access to their source of economy	• Loss of employment • Loss of land and shelter	Influence over the Ministry of Maritime Affairs and Fisheries
Sea shell farmers	Having a living	• Loss of cultivation area • Decrease of shell production	Influence over the Ministry of Maritime Affairs and Fisheries
Communities industries	Increase profit and long-term continuity of business	• Disruption of fishing activities will decrease the production of the industries • The production cost might be increased due to fishing landing site relocation	Influence over the Ministry of Maritime Affairs and Fisheries
NGO			
Environmental NGO - The Indonesian Forum for Environment (Walhi)	Environmental conservation and protection	The population and habitats of mangrove and fauna will be threatened	• Having knowledge on taking legal action against the project • Influencing the public perception • Influencing the media
Fishermen Association - The People's Coalition for Fisheries Justice Indonesia (KIARA) - The Indonesian Traditional Fishermen's Association (KNTI)	Protection of the fishermen's rights	• The fishermen are not actively informed and involved in the planning stage of the project • This project is believed to worsen the environmental pollution in Jakarta Bay and also harms the remaining mangrove ecosystem and coral reef. • The difficulty in accessing the natural resources in the coastal area by the coastal communities may exist	• Having knowledge on taking legal action against the project • Influencing the public perception • Influencing the media

		because of the implementation of the project • The solution to relocate fishermen communities to the new housing complex is not beneficial for the fishemen • There is still no comprehensive study regarding the environmental impact • This project is inclined to accommodate the interest of the investors (eg. Protecting the properties and also boosting the value of the investment in the existing reclaimed land)	
Port Authorities			
PT. Pelabuhan Indonesia (Pelindo) II	• Improve national logistics chains in order to enhance the industrial competitiveness and investment climate • Increase the competitiveness of the port at international level and enhance the port productivity by being able to receive the largest container ships, which will trim down the costs needed for transportation and eventually will be beneficial for supporting national trade and economic activities	• New harbor development plan needs to be synchronized with the NCICD plan • The implementation of the project might constraint the accessibility of the port	Having the authority regarding Tanjung Priok port's operation and development.

Private Developers			
Investor	Increase profit and long-term continuity of business	Business opportunity	Financial resources
Other private/ state owned companies			
State owned Electricity Company	Distribute electricity without any disruption	• Three power plants which have the capacity of 1,670 MW, 2,052 MW, and 800 MW are located near the proposed project area. These power plants are the backbone of the power supply in Jakarta. • The project might disrupt the supply of sea water that functions as a cooling system for the power plant. This disruption might cause damage to the machine and outages will likely to occur	Having a monopoly on electricity distribution in Indonesia
Indonesian Association of Submarine Communication Cable System	Keep the stability of communication across the nation	• The possibility that the reclamation plan has the potential to hamper the submarine communication cable system, thus it may disrupt the communication access across the nation. • In the long term, it can decrease the interest to industrial investment and the national economic competitiveness in the global economy	Having the responsibility to keep the stability of communication in Indonesia
Expert/ Consultant/ Academia			
Opponent	Share their knowledge for better solution	Great sea wall and land reclamation are not the answer for flooding and land subsidence problems	• Having knowledge about technology and consequences of proposed solution

			• Having influence on public perception
Proponent	Share their knowledge for better solution	The project will have a positive contribution to the coastal communities and also the nation	• Having knowledge about technology and consequences of proposed solution • Having influence on public perception

5

National Capital Integrated Coastal Development – The decision-making process and stakeholder interactions

In this chapter, the information that has been gathered from the newspapers is structured to understand the current decision-making process in the NCICD project. From this information, the actors, arenas, and interactions among stakeholders in decision-making process are analyzed. This analysis is important to know how the decision-making process was conducted in the past, what went wrong in the plan, and what important aspects have been missed in the implementation of decision-making process. Finally, this analysis in this chapter is hoped to help deciding the suggested approaches to be proposed for future improvement of the project plan.

5.1 Decision-making process of the development of North Jakarta coastal defence master plan

5.1.1 The initiation of future coastal defence in North Jakarta (2009 – 2011)

Jakarta Coastal Development Strategy (2009-2011)

In November 2009, the bilateral cooperation framework between the Government of Indonesia (GOI) and the Government of the Netherlands (GON), particularly in flood management sector, was projected by the National Development Agency (Bappenas) to deliver a strategic plan for the coastal defence and management of Jakarta, which is called the Jakarta Coastal Development Strategy (JCDS), as a response of massive flooding event in 2007. This project was preceded by Jakarta Hazard Mapping Framework study, which revealed that not only the rain intensity, but also the high tide from the sea was responsible for disastrous flooding in 2007. The study also

reported that the combination of high sea water level and ongoing land subsidence would make North Jakarta prone to flooding more often in the future.

The JCDS project under the cooperation between the GOI and GON was executed from September 2010 to September 2011. The key actors in this phase are the Ministry of Public Works that was assigned as the executing agency and BAPPENAS, acted as the chairs of Interdepartmental Steering Committee. The GON shared the expertise in flood management by giving technical assistance to the executing agency. Thus, the expert team was established, in which the members are the collaboration between Indonesian and Dutch experts, including Deltares, Urban Solutions, Witteveen + Bos, Triple-A Team, ITB, PusAir and MLD, and expert staff of the Dutch Ministry of Infrastructure and Environment.

As a reaction of the major flood event in 2007, the JCDS project has the objective to map out the problems in the northern coast of Jakarta, preparing strategic plans, and also gathering crucial stakeholders. With the help from the expert team, the executing agency delivered Triple-A reports that consists of Atlas, Agenda, and Aturan Main (rules of the game). First, the Atlas report contains systematically gathered information from multiple sources that cover the condition of North Jakarta from various context, which include spatial and environmental context, socio-economic context, infrastructure facilities, and institutional context. Second, the Agenda report integrates existing and proposed plans from different stakeholders. Lastly, Aturan Main defines the procedures of strategic institutional arrangement and capacity building. These reports would be served as a basis for decision-making process in guiding the development of Jakarta coastal defence master plan.

In the Agenda report, the JCDS study delineated three key stages of flood prevention measures with the integration of additional measures, e.g. the development of road, water supply, sewerage and sanitation system, land reclamation, and port expansion. The first stage (2012 – 2015) includes the construction of on-land sea dike, which aims to provide short term flood protection until 2020. The second stage (2015 – 2020) aims to provide medium term measures of flood protection until 2030 with the implementation of offshore sea dike. The last stage (2020 – 2030) has the objective to provide adequate long-term protection at safety level beyond 2030 with the development of offshore sea dike. Furthermore, the implementation of additional measures would be integrated in each stage.

Around the time when the JCDS project was conducted, Jakarta Administration and the team comprising of many urban planning experts had also been preparing Jakarta's 2010 – 2030 Spatial Planning Bylaw (RTRW) since 2008. RTRW is macro policies document that guide the future development of Jakarta for the next 20 years. Accordingly, Jakarta Administration, as the main

client-beneficiary of the JCDS project, added the plan of sea dike construction, known as giant sea wall, in the RTRW 2030, in which this sea wall was not incorporated in the plan prior to 2010 (Anya, 2016).

In November 2011, there was a meeting in Den Haag that has the agenda to discuss the continuity of the Jakarta Coastal Development project between the representatives of Indonesian and Dutch officials. Both representatives agreed to proceed with the next phase of Jakarta coastal development project, as previously discussed in July 2011 where the Dutch delegation decided to grant 4 million euro for the next stage of the plan. In addition, the meeting concluded that it was of vital importance to review the adequacy of JCDS study and if it is needed, to provide supplementary recommendations by performing End of Project (EOP) review. Subsequently, the EOP review marked the end of the JCDS phase of North Jakarta coastal development decision making process.

Actors, Arena, and Interactions

The overview of aforementioned actors involved reveals that there were two main policy arenas in which the actors interact with each other during the course of decision-making process. Firstly, the foreign contracting arena, where the discussion and negotiation regarding bilateral cooperation in flood management happened between GOI and GON. Secondly, the expert arena, where the Indonesian and Dutch experts shared the expertise and knowledge to set a strategic direction for further development of coastal defence plan.

However, it is evident that the NGOs or interest groups and affected communities were absent in both of policy arena. Later, in August 2012, Koalisi Pulihkan Jakarta (Restore Jakarta Coalition), a coalition of NGOs that focuses on areas of environmental protection and human rights filed a judicial review against Jakarta city bylaw that regulate spatial planning of the city for the next two decades. The bylaw that includes large infrastructure project, for example giant sea wall, was considered violating higher regulations, including laws on the environment, spatial planning and public information transparency.

5.1.2 The formulation of coastal defence master plan (2012 – 2014)

National Capital Integrated Coastal Development (NCICD) (2012 – 2014)

This phase is the follow up of JCDS project. It was based on the agreement between the GOI and the GON to proceed with the next phase of Jakarta coastal development project. Dutch delegation at that time also decided to grant 4 million euro for the next stage of the plan. This follow up plan

is called National Capital Integrated Coastal Development (NCICD) which provides an offshore solution as a starting point (*http://en.ncicd.com/ncicd/ncicd-history/)*.

According to the interview with the Dutch Consultant, four stakeholders are responsible for the coordination, planning, and implementation roles of the project. The main Indonesian governmental bodies that directly involved in the project are Coordinating Ministry for Economic Affairs, State Ministry of National Development Planning (BAPPENAS), Ministry of Public Works, and the Provincial Government of DKI Jakarta. These stakeholders were supported by the Dutch and Indonesian experts in working on more detail master plan, involving Dutch consortium.

In this phase, several public consultation meetings were held that took place in University of Indonesia (UI) Depok, Tangerang, and Bekasi. Its main objective of the meetings was to achieve common ground for the problem analysis. It was reported that varied stakeholder groups were invited, comprising of the representatives of related Ministries, local governments, research institutes, Dutch consultants, academia, media, NGO, and students. However, the representatives of NGOs, high official figures from local government, and media attended the meeting were relatively low.

During this phase, Dutch Infrastructure and Environment Minister Melanie Schultz van Haegen and several Dutch infrastructure companies visited Indonesia with the aim to strengthen bilateral cooperation on water management and port development. Their visitation also included bilateral discussion regarding the NCICD plan and their willingness to give assistance on water projects in Indonesia. Besides the bilateral cooperation with Dutch government, Indonesian government also established cooperation with the South Korean government in the area of infrastructural development, including the NCICD project. South Korea has the experience in constructing33.9-kilometer length sea wall, called Saemangeum sea wall with the reclaimed land around the sea wall for industrial and agricultural purposes. Similar to the NCICD plan, this sea wall project also has to deal with wave of disapprovals, especially from the environmental advocates.

In a meeting with the South Korean Foreign Minister, JokoWidodo, the governor of Jakarta at that time, asked the technical assistance from South Korea as this country has the experience in constructing Saemangeum sea wall. (9 Oct)

The coordination meeting was held in early October 2014 and led by the Coordinating Minister for Economic Affairs and attended by related Ministries. In the meeting, the ministries involved discussed several important issues as follows:

- The stakeholders involved in the meeting agreed to build eight kilometers of sea wall in the first phase of the project and planned to finish it in 2017 with the funding from the Ministry of Public Works and Jakarta Administration, while the rest of the project will be built by the investors.
- The meeting also discussed the relocation scheme for the communities who need to be relocated due to the implementation of the plan. For the people who do not own the land, the government would apply the rental system and they would not get compensation. Otherwise, government would give compensation according to the regulation.
- Moreover, the stakeholders also conferred about the developers' obligation to construct the wall before getting permission to do land dredging.
- The discussion about setting up institutional body that consists of coordinating team, implementing agency, and state-owned enterprise because the plan needs funding, not only from the government budget, but also from the private investors.
- Ministry of Environment stated that the Strategic Environmental Assessment (SEA) of the project as the basic reference for the Environmental Impact Assessment (EIA) has not yet finished.

In October 2014, the groundbreaking event of NCICD's first phase was commenced by the central government. Several days after the groundbreaking event, the resistance from the People's Coalition for Fisheries Justice Indonesia (KIARA) and the Indonesian Traditional Fishermen's Association (KNTI) against sea wall project was proclaimed in a joint statement. The key message of the joint statement is that the project would not be an effective measure in preventing the flood and water problem in Jakarta. Furthermore, this project would negatively affect the livelihood of the coastal communities. The People's Coalition for Fisheries Justice Indonesia (KIARA) also held protest action in Bundaran Hotel Indonesia against the construction of Giant Sea Wall.

In the meantime, the environmental activists held discussion about their skepticism regarding the benefit of NCICD project. The official of the Ministry of Environment, who participated in the discussion, disclosed the negative environmental effect that might arise due to the implementation of the project, including sedimentation that could aggravate flooding and degradation of current environmental infrastructure because of the excessive use of sand material for reclamation project. In line with the Ministry of Environment, Ahmad Safriudin, the environmental activist, suggested that the project is aimed to accommodate the private developer interest to ease the implementation of reclamation land. Moreover, he predicted that the sea wall would solely solve around 8 % of the flooding problem in Jakarta, particularly in North Jakarta, while other 92% of flooding problem are scattered in the center, south, west, and east of Jakarta. He then proposed more effective and efficient solutions to address flooding problems, for instance: restoring land use in Jakarta that has been changed over time into more open green

spaces, mangrove forests, nature reserve, etc; improving the Jakarta's drainage system; strengthening the law enforcement on land use changes; and halting the land use changes in Jakarta and in the upstream area of rivers flowing through Jakarta.

During this phase of decision-making process, there has been a lot of criticism directed towards the NCICD project. Many experts criticize the urgency of building sea wall and the land reclamation project to prevent flooding problem in North Jakarta. The experts from the research universities commented that the giant sea wall is not an effective solution for preventing flooding. Furthermore, the criticism also pointed out the capability of the people in tackling the project and their expertise in technology which has not evolved yet, particularly the technology for maintaining the sea wall. In addition to that, the researcher from the Agency for the Assessment and Application of Technology (BPPT) did the modeling to see the impact of NCICD project. The result of the modeling describes the huge effect on the environment, such as water quality, sediment transport, and hydrodynamics pattern. The researcher from BPPT explained that the bay naturally has the mechanism to clean up the waste in the sea, however the changes of sea current pattern would automatically disrupt this natural cycle.

The expert from the Indonesian Association of Urban and Regional Planners, Bernadus Djonoputro, criticized the involvement of the private companies in the development of public infrastructures. He said that maximizing profits are the main objectives of the private companies, thus their objectives might marginalize the coastal communities' interests. He argued that this condition might trigger huge social and economic discrepancies between the coastal communities and the new economic actors in the planned reclaimed land, therefore the social impact that would affect the coastal communities need to be assessed. He also added that the government should prepare and socialize this monumental project transparently according to the legal regulation. On the contrary, different perspectives were conveyed by the urban economics expert from University of Indonesia. She showed her support of the NCICD plan implementation as a flood preventive measure due to high possibility of inundation problems in Jakarta.

Until the end of November 2014, the controversy regarding the NCICD plan has not yet abated. Following this ongoing controversy, BAPPENAS hinted that the feasibility of the project needs to be reviewed, although there was no formal decision yet at that time. One of the problems which need to be reviewed is the environmental impact of the project because the project is not only limited to prevent flooding problem by constructing a sea wall, but also having land reclamation in which residential area, apartments, and also business area will be built in that land.

In December 2014, a coordination meeting was held, led by the then Coordinating Minister for Economic Affairs, Sofyan Djalil. This meeting pointed that the project needs an integrated

feasibility study to implement this flood prevention project. The important issue that should be assessed is the pollution problem of 13 rivers crossing Jakarta which ends up in the Jakarta Bay.

Meanwhile, the environmental and fishermen NGOs, apart from criticizing the negative impact of the project, also argue that the public transparency was low and the affected communities were never discussed and informed during the decision-making process. The fishermen NGO, KIARA, showed the disapproval regarding the project by organizing protest action. This round

Actors, Arena, and Interactions

In this phase, more stakeholders are involved to be the responsible authorities of the project as the project is not only for the interest of Jakarta, but also is deemed to be national importance. The main arena in this phase is the arena where the responsible authorities and Dutch consortium prepared the master plan. It can be said that the experts are the key stakeholder in this phase.

The opposition from the stakeholders is more evident than the previous stage. It is worth mentioning that the public consultation arena is exist, involving varied stakeholders, for example local governments, NGOs, media mass, universities, etc. However, several groups of stakeholders, particularly NGOs, still constantly oppose the project, therefore it means that the public consultation meetings were not successful in achieving the common ground of the problem analysis as the interviewee also mentioned that the consultation meetings held by the government are more like giving the information rather than discussing about the project. The criticism was not only addressed towards the project itself, but also the process of the decision-making which is considered to be not transparent and lack of stakeholders' involvement. Thus, another arena, involving KIARA and KNTI, was created, protesting the implementation plan of the project.

5.1.3 Re-assessment of the plan (2015 – now)

The decision of central government to review the plan

The issue of the re-assessment of the plan has emerged since late 2014. The Minister of National Development Planning gave an indication that the plan needed to be reconsidered, particularly the environmental impact assessment of the reclamation plan which is part of the NCICD plan.

In October 2015, the Research and Development Center for Marine and Coastal Resources, Ministry of Maritime Affairs and Fisheries published a study that makes a prediction analysis of the giant sea wall construction effect. The study reported that the construction of sea wall would have a damaging effect on the existence of islands and natural habitat in Jakarta Bay, including

coral reef and diverse fish species. Furthermore, the report also mentioned that about 24,000 fishermen would need to be relocated from their houses.

In this phase of decision-making process, the decision regarding NCICD plan has been largely affected by the dynamics of the reclamation plan which is under the responsibility of Jakarta Administration. In October 2015, Jakarta Administration organized a public consultation meeting that had the agenda to discuss the draft of Jakarta city bylaw on Jakarta North Coast strategic area spatial planning. During the consultation meeting, the criticism was directed towards the land reclamation project. The representative of the Indonesian Forum for Environment (WALHI) was persistently against land reclamation plan, owing to the fact that it will create various environmental risks. At the same time, the representative of the Ministry of Transportation expressed his concern regarding the accessibility of the ships traveling from and to the ports. Whereas, the Indonesian Association of Submarine Communications Cable Systems representative stated that there are many submarine cables from different telecommunication providers that would be altered by the planned islets. The consequences of interrupting the communication between islands or even countries might happen if the cautious measures are not taken.

The perception of reclamation project is getting worse because of the bribery case involving the Jakarta City Councilor, Mohammad Sanusi, who was caught red-handed taking bribe around Rp 2 Billion (US$152,000) from one of the reclamation developers, PT. Agung Podomoro Land (APL). It was suspected that the bribe was intended to expedite the finalization of bylaw and to eliminate a clause that states an obligatory 15% contribution from the involved developers.

Following the bribery case, in April 2016, the then Coordinating Maritime Affairs Minister, Rizal Ramli, on behalf of the central government, instructed to temporarily halt the construction of Reclamation Island in North Jakarta. The decision was taken because of the regulation and authority overlaps issues between the central government and Jakarta Administration on the permit issuance for the construction of reclamation islands in North Jakarta.

After the suspension of reclamation project, the President held a meeting with related Ministers, Jakarta, West Java, and Banten Governors in the presidential office. Few important points were highlighted from the meeting. Firstly, BAPPENAS was appointed by the President to draft a more comprehensive NCICD plan to ensure that the master plan would address environmental, social, and legal problems. Secondly, the government would form a joint committee with varied members from related ministries (Coordinating Maritime Affairs Ministry, Ministry of Environment and Forestry, Ministry of Fisheries and Maritime, Ministry of Land and Spatial Planning, Ministry of Transportation, Ministry of Public Works and Housings and Jakarta

Administration) to do the evaluation of North Jakarta coastal reclamation project. Lastly, the integration between land reclamation project and NCICD plan.

In July 2016, the Coordinating Maritime Affairs Minister, Rizal Ramli, stated that the team found a heavy regulation violation on the construction of artificial islet (in this case islet G). The team gave a recommendation to permanently stop the construction of islet G. The investigation of the task force pointed out that besides endangering the environment, the construction of islet G would disrupt the current submarine power cables and gas pipelines which were situated under the islet and also cause the disturbance of ship traffic.

However, the Jakarta Administration refused to follow the recommendation of the task force and subsequently sent a letter to President that explained the ongoing reclamation project has already been conducted properly. The administration stated that there is no clear reason to halt the reclamation as the technical requirements and permission procedures have complied with the relevant regulations.

In September 2016, the new Coordinating Maritime and Fisheries Affairs Minister, Luhut Panjaitan, was appointed, succeeding the previous Minister, Rizal Ramli. He, on behalf of the Central Government decided to give permission to resume the reclamation project in North Jakarta that has been previously suspended by the then Minister, Rizal Ramli. The decision to continue reclamation project was taken on the basis of the study that involves 7 state institutions, Ministry of Environment and Forestry, Ministry of Maritime and Fisheries, Ministry of Transportation, Ministry of Law and Human Rights, Agency for the Assessment and Application of Technology (BPPT), Jakarta Administration, and State Electricity Company (PLN). It means that the re-assessment of NCICD plan that is currently underway will also consider the reclamation project of Jakarta Government.

The Save Jakarta Bay Coalition, comprising of the representatives from the environmentalist, fishermen, and students, responded the decision by issuing open legal notice to the government as the decision to continue the reclamation project was decided.

Actors, Arena, and Interactions

The reclamation project, although not directly related to the NCICD plan, has a quite huge impact to the public perception of the NCICD plan. The important event is the bribery case involving the Jakarta City Councilor. As a consequence of the case, the public trust towards the government, particularly in implementing such large infrastructure project like NCICD plan is decreasing even further. Several arenas exist in this round of decision-making process. The first one is the arena involving Ministry of Maritime Affairs and Fisheries. This ministry published a study which predicts the effect of giant sea wall construction. The second one is the arena

involving Jakarta Administration and other relevant stakeholders. The public consultation meeting was held by Jakarta Administration to discuss draft of Jakarta city bylaw on Jakarta North Coast strategic area spatial planning. Several stakeholders conveyed their concern regarding the possible negative effect of sea wall. This round also signifies that the new actor enters the arena. Coordinating Ministry of Maritime and Fisheries Affair has the main power to affect the decision of the plan.

5.2 Case analysis of NCICD project

5.2.1 The main values offered by the NCICD plan:

Safety

In the NCICD plan, there are two proposed major infrastructures works that have been disputed between the proponents and opponents of the project: the proposed plan of outer sea wall construction and land reclamation. The construction of outer sea wall is planned to attain the main goal of the project which is to provide the protection function for the capital city against flooding from high tides. This protection function can be defined as safety value. From the decision-making rounds, it can be clearly seen that the safety value is the main value promoted by the responsible authorities.

Economic development

In addition to the protection function, the project also offers the opportunities for the coastal zone development in which the land reclamation plan is integrated to the project. According to the master plan of NCICD (Coordinating Ministry for Economic Affairs, 2014a), the land reclamation project will focus on two important factors of the spatial development concept. First, the connectivity of the proposed reclaimed land with the current city center of Jakarta. Second, top real estate location with the iconic design where the new business center would be established with the impressive view of beachfront. Hence, the project seeks to turn Jakarta into one of the waterfront cities. It can be clearly seen that the government attempts to link the project with the economic development by attracting economic investment.

5.2.2 Interdependency of actor

One of the characteristics of networks is the interdependency among actors. This interdependency was created because actors are mutually dependent and need other actors to accomplish their objectives (Koppenjan & Klijn, 2004). In the NCICD case, the responsible authorities depend on the resources of other actors, for example in the aspect of financial, technical, and authority.

The Ministry of Environment, in the beginning of the project, argued that there will be more adverse environmental effects due to the implementation of the project. However, the responsible authorities depend on the resources of Ministry of Environment. Ministry of Environment has the authority to issue or cancel environmental permit which is a required procedure before executing the plan. Therefore, the inclusion of Ministry of Environment in the decision-making process becomes necessary in order to keep them informed regarding the progress of the plan, to affect their perception of the project, and to obtain goals.

Furthermore, for getting the resources needed, the responsible authorities couple the problem in funding the project with reclamation project which evokes new problem. To finance the NCICD project, the government plans to divide the financial budget with the private developers. For the phase A of the project, which has the objective to strengthen the current coastal defence, the private developers who are responsible for the reclamation of 17 islets have the obligatory to build the sea wall as their added contribution. It means that the government has fewer burdens in financing the project. However, due to the negative perception of public towards the reclamation project, coupling the problem in funding the project with reclamation project becomes quite problematic. As a consequence, public perceives that the NCICD project is the same project as the reclamation project, thus it may lower the acceptability of the project.

Realizing the lack of technical expertise, the responsible authorities depend on the technical assistance from other countries. We can see how the NCICD project was initially planned, which was the result of bilateral cooperation between the government of Indonesia and the government of the Netherlands in order to find the root cause of the flood disaster in 2007. This cooperation was continued with the feasibility study which produced NCICD master plan in 2014. In 2015, Letter of Intent (LOI) was signed by the Indonesian Government, Dutch Government, and South Korean Government which is a form of agreement to give an Official Development Assistance (ODA) to assess the technical aspect of seal wall construction.

5.2.3 Selective Activation Network

We may consider that the planning process of the project was unsatisfactory. It can be seen from the opposition groups who were emerged since the beginning of the project until now. The fact that the responsible authorities only involved the expert team during the decision-making process might make the consensus generally faster without important obstacles, however it might trigger opposition from various stakeholders who got excluded from decision-making process.

We can say that the responsible authorities were selective in involving the stakeholders, in this case only involving actor with production power. Ideally, the authorities need to conduct selective activation network, in which stakeholders with production power, blocking power, and diffuse power, are involved in the process. In this case, the Fishermen NGO, Environmental NGO, and the affected communities who hold the blocking power were left out in the process, thereby increasing the risk of 'catch-as-catch-can'. 'Catch-as-catch-can' creates rampant behavior in which the actors would make any attempts to block the decision.

5.2.4 The need for negotiated knowledge

As explained in the sub-section 5.2.2 and 5.2.3, the feasibility study team was mostly engaged in the planning process. The researchers from government research institutions and universities, however, were not actively involved in the decision-making process. Therefore, it can be expected that they have different point of views in regards of problems and solutions of the plan and it thus may results in opposition and knowledge conflicts (Koppenjan & Klijn, 2004).

In the discussions on the expected effects of the project, each actor (the researchers) has their own opinions based on the scientific data. For instance, the Research and Development Center for Marine and Coastal Resources, Ministry of Maritime Affairs and Fisheries, as previously mentioned, issued a report regarding the prediction analysis of the giant sea wall construction effect. The report generally concludes that there will be damaging effect on the environment and hydrodynamics pattern of the sea. It also discusses socio-economic aspect of the plan, particularly the effect on the affected communities. Similar concerns are expressed by the Indonesia Science Institute (LIPI), particularly the negative effect on the social and cultural aspect. Furthermore, the disagreement regarding the project is also conveyed by the researchers from several universities through public discussions and media. For example, the researcher from ITB, Muslim Muin, who consistently oppose the plan, criticizes the huge cost and also serious environmental harm that would be inflicted for constructing giant sea wall. While the researcher from IPB, Alan Koropitan, argued that Jakarta needs to focus on managing heavily polluted rivers in order to prevent flooding problem, instead of constructing outer sea wall and land reclamation.

From the explanation above, it is evident that each researcher has different perspectives of problem and solutions and also their own expertise, hence disagreement regarding the plan is emerged. In the case of the implementation of technology, for instance giant sea wall, which is relatively new in Indonesia, supporting multi-sectoral knowledge from actors with varied expertise is therefore important. It is sufficient to justify the need of involving other experts or researchers apart from the feasibility study team. The negotiated knowledge with the involvement of actors who have expertise in the field thus needs to be conducted to lessen the contested data and information regarding the project and preventing the knowledge conflict.

5.2.5 The relevancy of problem formulation to other actors

The plan is targeted a quite broad problem by shifting the importance of the project from addressing Jakarta's problems to alleviating Indonesia's problem. Primarily targeting flooding problem, the responsible authorities coupled this flooding problem with other problem, for instance water shortage, water pollution, and also traffic jam by formulating integrated plan in the coastal area of North Jakarta. The responsible authorities seem to focus on the area of safety and economic development. However, they do not realize that the problem formulation may not be attractive for the marginal communities along the coastal area. We may think that addressing flooding problem can increase the acceptability of project, but in reality, according to the interview with the communities, they are not bothered with the perpetual flooding. In fact, they accept it as part of their lives. Their main worries are how they can satisfy their necessities. Hence, the problem formulation advocated by the government does not seem relevant to the marginal communities.

5.3 Chapter conclusion

In conclusion, the analysis of this chapter has found that there are important aspects have been missed in the processes which lead to the refusal of the project plan. The most important aspect is the involvement of stakeholder in the process. From the reconstruction of the case, it can be clearly seen that there are several stakeholder groups who have been underrepresented. For example, the NGOs who have been consistently opposed the project. It should be realized that the stakeholders are mutually dependent and need other actors to accomplish their objectives, therefore the NGOs who has blocking power are necessary to be included in the project. The other example is the Ministry of Environment. This government institution, although is not the main part of the project, should be actively involved in the process because the environmental aspect is the main concern of the project and Ministry of Environment has the important resources to help with the continuation of the project. Furthermore, the researchers and experts are also the important part of the project. The disagreement regarding the plan is emerged due to varied perspectives, thus the negotiated knowledge with the involvement of actors who have expertise in the field needs to be conducted to lessen the contested data and information regarding the project and preventing the knowledge conflict. In addition, other important aspect which need to be considered by the responsible authorities is the value of relevant stakeholders. For example, the value of marginal communities along the coastal are should be covered by the project. Currently, the problem formulation of the project is not attractive for the marginal communities. Hence more relevant problem formulation should be addressed by including the value of marginal communities.

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6

Values and Value Conflicts

Chapter 6 begins with the explanation of value identification with regard to NCICD plan. Following the explanation, the analysis of value conflicts is presented with detail explanation of issues arising for each value conflict.

6.1 Identification of stakeholders' values with regard to the NCICD Plan

In this section, the steps of finding competing values in NCICD plan and also the results of the study will be explained and delivered. The values that are implicated in certain technological design can be identified by using a structured method presented by the paper of Dignum et al. (2015). Emphasizing on the importance of public debate, Dignum et al. (2015) use crucial available documents that contain arguments from varied stakeholders as the source for identifying public values related to the Dutch shale gas debate. They argue that this method can be applied to a broader range of topics, including infrastructural projects.

Similar to the shale gas case in the Netherlands, NCICD project in Indonesia continues to encounter a high resistance from the public. The project which was officially commenced in 2014 aims to provide a long-term solution for flooding problems and at the same time contribute to socio-economic development in Indonesia. This project is deemed to be controversial in the public domain as the plan includes the construction of large protection wall enclosing the sea and land reclamation. Public perceives that this project would have fatal environmental and social impacts, including the disappearance of mangrove forest, undesirable effect on the livelihoods of vulnerable communities, etc. Hitherto the plan has remained controversial, despite formal assessment conducted by the Indonesian government and Dutch consultant, in which the plan is considered as a measure to save Jakarta from being a sinking city caused by an alarming rate of land subsidence. Noting this constant debate of the project, identifying societal values is, therefore, important to understand the underlying reasons of persistent oppositions.

Controversies around the project might be beneficial to find competing values at stake (TBM TU Delft, 2015). The elaborated method of VSD by Dignum et al. (2015) is thus applied to acquire key values held by stakeholders from the newspapers source based statements.

The arguments that were referred in this analysis were mainly based on the statement from the media mass. The reason is that the arguments from stakeholders involved were usually not documented in a form of official report, but they were mostly found in a form of statement released in the media mass.

As mentioned in the previous chapter 3, the selected arguments are considered as norms in the value hierarchy. The values were then derived from the referred arguments. The frequency of statements expressing specified values across the study period can be seen in
Figure 7.

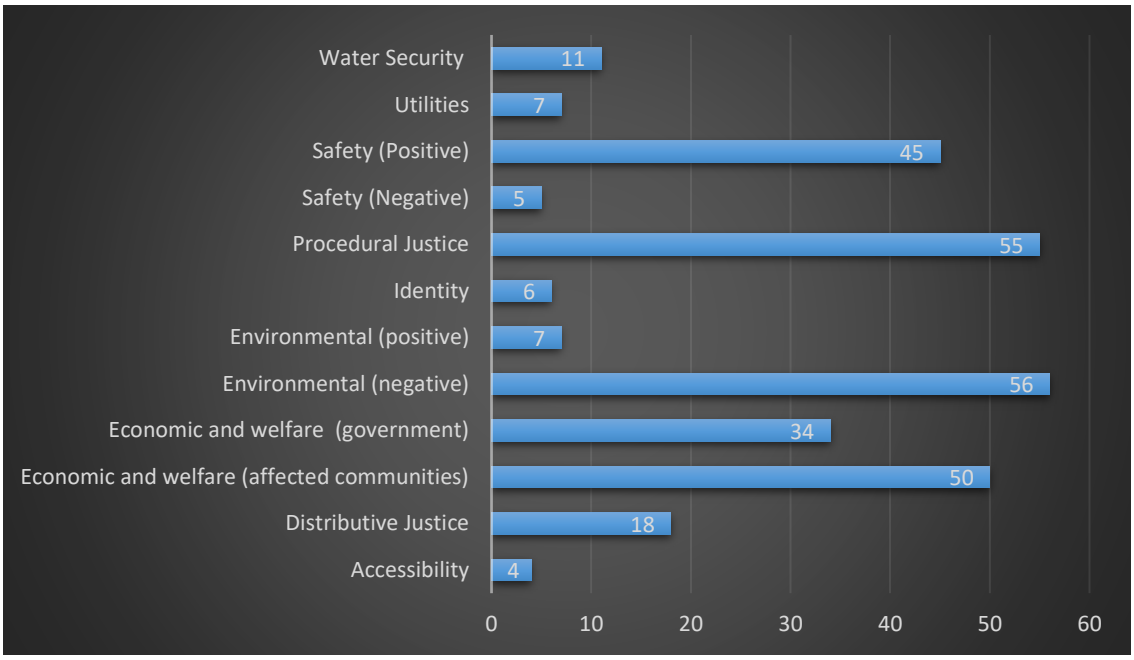

Figure 7 - Frequency of statements coded as specific values

These are the explanation of values derived from the statements in the media mass:

a. Environmental

From the arguments in the media mass, there are 56 statements which can be identified as negative environmental value. The negative environmental value is the value with the highest frequency among other values. This value is derived from the statements regarding the negative

environmental impact of the project. It means that the negative environmental impact of the project is the topic that mostly discussed in the public debate. The themes included in the negative environmental value are the waste and water pollution, required sand material, degradation of coastal systems, disappearance of mangrove ecosystem, disappearance of islands, and sedimentation risk. This value is identified from several stakeholders, including Ministry of Environment, Ministry of Maritime Affairs and Fisheries, Indonesian Science Institute (LIPI), environmental NGO, fishermen association, and the expert/ academia who are in the opposition category. On the other hand, the positive environmental value was derived from 7 statements regarding the positive environmental impact of the project which include the themes of ecological balance, environmental restoration, and environmental sustainability. The statements were issued by the proponent of the project, i.e. responsible authorities and the experts/ academia who support the project.

b. Procedural justice

As stated by Hall et al. (2013), honesty, transparency and also full and unbiased information are viewed as the principles of procedural justice. In case of NCICD plan, the existence of these principles can be judged from the planning procedure that is currently underway. NGOs that are particularly concern about the impact of the project on the environment and also fishermen livelihoods argue in the media that there are no information transparency and no active involvement of the coastal communities and NGOs during the planning stage; hence there is perception that this plan is a one stop solution for the flooding problem in Jakarta. There is also criticism addressed towards the decision-making process questioning the logical steps prior the decision was made.

From the interview conducted, the interviewee mentioned that there were several public consultation events held after 1 year of planning. However, the events were more like giving the information regarding the project to the people rather than having a dialogue that can influence the decision. It is understandable why people still show their disapprovals against the plan, despite having public consultation. King & Murphy (2012) identified the importance of 'non-instrumental voice' and 'instrumental voice' to procedural justice. Non-instrumental voice indicates the opportunity of a stakeholder to give opinion in a decision-making process even though without having the ability to influence the result, while instrumental voice indicates when a stakeholder's view might be taken into account in a decision-making process (King & Murphy, 2012). King & Murphy (2012) points out that stakeholders would apt to be more satiated if their opinions can have influence on the outcome.

The statements of varied stakeholders regarding the procedural justice value during the decision-making process of NCICD describe the participation process of the stakeholders who affect and

being affected by the project. From the media mass, there are 55 statements which have the value of procedural justice. These statements are then categorized into four important criteria of stakeholder participation and also the principle of procedural justice that become a concern for various stakeholders. The criteria and the example of statements are listed as follow:

	Criteria	Statement
1	**Transparency**	1. The absence of public participation (coalition of NGO) 2. Weakness on public communication (Fauzi Bowo, previous Jakarta Governor) 3. More transparent and detail study on land subsidence in Jakarta (BPPT) 4. The decision-making process is non- transparent (KIARA) 5. The information from the government, thus far, is regarded to be limited (KIARA) 6. All feasibility studies of the plan on environmental, social, economic, technical, and also legal aspect to be informed transparently to the public (Save Jakarta Bay Coalition) 7. The government should put more effort into publicizing the project to the public (Save Jakarta Bay Coalition) 8. The government, particularly Jakarta Government should be transparent to the public regarding the result of feasibility study, including the consequences and the benefits of the sea wall. (Indonesian Association of Urban and Regional Planner, Elkana Catur)
2	**Trust**	9. The project will be difficult to be implemented without the trust given to the government. 10. The giant sea wall, according to Muslim Muin (marine engineering expert), is planned with the aim to protect the underway reclamation project in Jakarta Bay. 11. The real challenge in tackling the flood issue is corruption. I suspect that fraudulent practices [occur] in most infrastructure projects [undertaken] in Jakarta 12. The Indonesian Forum for Environment (WALHI) suspects that the giant sea wall is the developers' way to eliminate the fishermen from Jakarta Bay.
3	**Involvement/ Representativeness**	13. The wall project is illegal because no one consulted or got permission from the affected residents. 14. This project will affect around 50 residents living near the project site, but the minister never involved me in the meetings prior to the ceremony, whereas I am the one who will be responsible if there are relocations involved, 'he said, adding, 'I am not sure the construction can start in the near future.' (North Jakarta Mayor) 15. The Investment Plan and Affiliation Development Director of State Electricity Company (PT. PLN (Persero), Murtaqi Syamsuddin, asked to be involved in the giant sea wall project in order to prevent the damages that might affect the power plants in North Jakarta. 16. Indonesian Association of Urban and Regional Planners, Bernadus Djonoputro, urges the Dutch party to be open and involve all the stakeholders.

		17. Muslim Muin (marine engineering expert) questioned why the central government and Jakarta Administration asked foreign experts to study Jakarta's flooding problem. Whereas, there are many local experts who have expertise in flooding problem and also have more understanding in Jakarta condition. 18. Indonesian Association of Urban and Regional Planners, Bernadus Djonoputro, commented that the planning process of NCICD plan does not reflect an inclusive and democratic planning. The planning process involves only the elite. 19. EIA public hearing was conducted without the involvement of affected communities and The Indonesian Forum for Environment (WALHI). Therefore, WALHI considers that the NCICD plan is illegal and cannot be implemented
4	**Informed consent**	20. The fishermen in Muara Angke haven't been informed about the giant sea wall plan, probably to avoid the polemics as a result of rejection from the communities (The Indonesian Forum for Environment (WALHI), Puput TD Putra) 21. Meanwhile, both Wawan and Tukimin (fishermen in North Jakarta) testified they never saw anyone from the administration coming to publicize the projects 22. North Jakarta Mayor, Heru Budi Hartono, said that the publication of the project to the communities, and the business doers who get the direct impact of the project is still relatively poor. 23. There is no communication with the fishermen as a stakeholder who gets direct impact of the project. 24. The Jakarta Authorities admitted that the publication of the project is still lacking. Jakarta government has a plan to hold a dialogue session involving the experts and related stakeholders.

Jakarta Spatial Plan Bylaw

	Criteria	**Statement**
1	**Involvement**	"The bylaw was drafted without any public participation," (KoalisiPulihkan Jakarta (Restore Jakarta Coalition)
2	**Transparency**	during the drafting of the bylaw, the public was denied the opportunity to give input. "Jakarta citizens were largely oblivious to the bylaw until it was deliberated last year. This is not how public information transparency works

Reclamation

1	**Resource Accessibility (Information resources)**	Reclamation is not only about the environmental impact analysis or other environmental problem, for instance land subsidence condition, but also about public acceptance towards the project. (Indonesian Association of Urban and Regional Planner, Elkana Catur) The administration should have campaigned about the reclamations with nearby fishermen before issuing the permits "because fishermen will be the ones impacted by the projects". (The Coalition of Indonesian Traditional Fishermen (KNTI))
2	**Involvement**	Public's point of view needs to be considered, particularly people living along the coast who will get direct impact from the project. (Indonesian Association of Urban and Regional Planner, Elkana Catur) The land reclamation project was not just a mere administrative or procedural issue, but was a larger problem concerning the constitutional right of every resident to a decent living, clean and healthy environment and waters, and the right to participate in developing the city. (The Indonesian Traditional Fishermen's Association (KNTI): M. Riza Damanik) The administration had invited related parties, including the Indonesian Forum for the Environment (Walhi), which has always been critical about the reclamation projects, for discussions before issuing the permits. (the Jakarta administration's legal bureau chief: Haratua Purba)
3	**Transparency**	The decision-making process of reclamation project needs to be done in a transparent and honest manner. Furthermore, the project needs comprehensive feasibility studies, including EIA study and also permits from relevant institutions. (National Committee of Economic and Industry (KEIN): Beni Sutrisno)

c. Safety

There are 45 statements of safety value in the arguments reported in the media mass. The statements from varied stakeholders mostly argued that the NCICD plan is the effort to prevent the threat of flooding due to the high tide. These arguments were delivered by the responsible authorities, The Coordinating Ministry of Maritime Affairs and the experts/consultants/academia who are part of the proponent of the project. While other 5 statements discussed the negative impact of the project which might affect the safety of seafaring and fishing activity. The stakeholders who delivered the statements are Ministry of Transportation and fishing association respectively.

d. Economic and welfare

The statements regarding economic and welfare value are divided into two categories. The first category is the statement about the objective of the project which includes the subject of cost-recovery, market potential, port activities and development, and urban development. The statements for the first category were argued by the responsible authorities and the experts/consultants/academia who support the project. The second category is the statements regarding economic and welfare value for the affected communities which include the subject of resettlement, housing, occupation, social structure, and access to coastal resources. The statements for the second category were expressed by Ministry of Maritime Affairs and Fisheries, Indonesian Science Institute (LIPI), affected communities, environmental NGO, fishermen association & the experts/academia who are the opponent of the project.

e. Distributive Justice

The distribute justice values were derived from about 18 statements in the media mass, including the statements from the Ministry of Environment, environmental NGO, fishermen association, and experts/academia who oppose the project. The statements mostly concerned about the unjust distribution costs and benefits to the marginal communities along the coast.

f. Water security

Certain stakeholders argue that the sea wall will have a function, apart from protecting the land from the flooding threat, as a clean water resources for Jakarta citizen. There are 11 statements which have similar concern, including the statements from responsible authorities, the Coordinating Ministry for Maritime Affairs, and the proponent of the project from the group of experts/consultants/academia.

g. Utilities

The value of utilities in this research were derived from the statements regarding the possibility of the project to disrupt the current underwater infrastructure, for example the power plant and the telecommunication cable. There are 7 statements argued by several stakeholders, including PT. PLN (Persero), Indonesian Association of Submarine Communication Cable, and the experts/academia who oppose the project implementation.

h. Identity

There are 6 statements regarding identity value which argued by several stakeholders including the environmental NGO, the affected communities, and Indonesian Science Institute (LIPI). The statements argued were about the fishing culture that might be eroded due to changing living environment if the project will be implemented.

i. Accessibility

The accessibility values in this research were derived from the statements of certain stakeholders, including Ministry of Transportation and PT. Pelabuhan Indonesia (Pelindo) II. The value is about the accessibility of shipping activity when the project is implemented.

The following table 6 and 7 are the summary of value identification and the stakeholders with their values.

Table 6 - Value identification with regards to the NCICD plan

Realm of values	Theme
Environmental	Waste and water pollution, required sand material, degradation of coastal ecosystem, disappearance of mangrove ecosystem, disappearance of islands, sedimentation risk and abrasion, ecological balance, environmental restoration, environmental sustainability.
Economic and welfare	Resettlement, housing, occupation, cost-recovery, market potential, social structure, port activities and development, access to coastal resources, urban development
Utility	existing infrastructure (telecommunication cable, power plant)
Security	Water supply
Identity	Fishing culture
Safety	Against flooding (coastal protection), fishing activities, seafaring
Accessibility	Shipping access
Distributive justice	Rights of traditional fishermen, disparity between rich and poor
Procedural justice, Trust	Decision-making process, coordination between central and local government, public involvement, Information transparency, skepticism towards government capability

Table 7 – Stakeholders and their values

Stakeholder	Values
Responsible Authorities	
Coordinating Ministry for Economic Affairs	• Economic and welfare • Water security • Safety
State Ministry of National Development Planning (BAPPENAS)	• Economic and welfare • Water security • Safety
Ministry of Public Works	• Safety • Economic and welfare (cost-recovery) • Environmental • Water security
The Provincial of DKI Jakarta	• Safety • Economic and welfare • Environmental • Water security
Other government regulators	
Ministry of Environment	• Environmental • Distributive Justice
Coordinating Ministry for Maritime Affairs	• Economic and welfare • Water security • Safety
Ministry of Maritime Affairs and Fisheries	• Economic and welfare • Environmental
Ministry of Transportation	• Accessibility • Safety
Indonesian Science Institute (LIPI)	• Environmental • Economic and welfare • Identity
Affected Communities	
Fishermen	• Economic and welfare • Identity
Sea shell farmers	
Communities industries	

NGO	
Environmental NGO - The Indonesian Forum for Environment (Walhi)	• Environmental • Economic and welfare • Identity • Distributive Justice
Fishermen Association - The People's Coalition for Fisheries Justice Indonesia (KIARA) - The Indonesian Traditional Fishermen's Association (KNTI)	• Ecomic and welfare • Distributive justice • Environmental • Safety
Port Authorities	
PT. Pelabuhan Indonesia (Pelindo) II	• Economic and welfare • Accessibility
Private Developers	
Investor	Economic and welfare (profit)
Other private/ state owned companies	
State owned Electricity Company	Utilities
Indonesian Association of Submarine Communication Cable System	Utilities
Expert/ Consultant/ Academia	
Opponent	• Environmental • Economic and welfare • Utilities • Distributive Justice
Proponent	• Environmental • Economic and welfare • Safety • Water security

6.2 Analysis of the value conflicts: The NCICD case

In 2016, this project gained once again the center of attention from the public because of the bribery case involving Jakarta City Council member, Muhammad Sanusi, and the president director of PT. Agung Podomoro Land, one of the private developers, Ariesman Widjaja. It is suspected that the bribery has relation with the draft bylaws on Jakarta's zoning plan and northern coastal territory in which this accusation is later denied by Sanusi. Due to the bribery case and the alleged violation encompassing the Northern Jakarta reclamation project, the government has decided to suspend the project for at least 6 months. The current Indonesian President Joko Widodo, who is in favor of NCICD project, gives the timespan to improve the Northern Jakarta reclamation plan, ensuring the improvement on legal, environmental, and social issues and also orders to integrate this plan with the NCICD plan.

The explanation on the previous and ongoing Jakarta's Northern Coastal Area Development Project, especially the North Jakarta reclamation project is deemed to be important for further analyzing the conflict arisen in NCICD plan. The public debate mostly found in the media mass shows that people frequently link the NCICD plan and the reclamation project that is currently under the authority of Jakarta Government. Hence, the perception of public regarding NCICD plan is greatly affected by the controversy around this reclamation project.

The value conflict analysis built in this chapter is based on the conflicting value between the main value offered by the NCICD plan and the values of stakeholders which have been and will be affected due to the implementation of the project. The main values offered by the NCICD plan have been indicated in chapter 5.2, which consist of safety and economic development value. These safety and economic values are also supported by the statements of certain stakeholders, particularly the responsible authorities. The example of statements which support the safety value as the main value of NCICD plan are:

1. ".. NCICD is the project which has the objective to protect the city from the flooding threat.."
2. ".. The project is urgent as North Jakarta is sinking.."
3. ".. The starting point of the project is flood safety.."

While the economic development value can be derived from these following statements:

1. "The development in Jakarta Bay under the NCICD scheme would be the answer for Jakarta….. He also underlined the importance of reclamation to support the construction of city infrastructure. It will also later relate to the development of ports, airports, highways and mass transportation that will all have to be well integrated."

2. ".. the community a "new city," billing it in glowing terms that would be a stretch if applied to the Indonesian capital. The new city would be bereft of the infrastructure woes that plague Jakarta he said. It would be competitive, and most of all it would be "efficient." "It will be an efficient city because an airport, a seaport and an industrial zone will be within a close range," he said. "The industry will be competitive because of their proximity to the seaport."

The Following subsections are the analysis of value conflicts which need to be mitigated to enhance the acceptability of the project.

6.2.1 The conflict: safety, economic development vs environmental protection

The development of Jakarta Bay has a long history that entails political struggle involving Jakarta City Administration and the opposition of the project, particularly a person and groups of people who bring forward the importance of environmental and social agenda. The negative perception of the public towards the plan surrounding land reclamation has been built since the beginning of waterfront projects in North Jakarta. The negative impacts, primarily environmental destruction and flooding problem have been ingrained in public's mind over the years. Although the NCICD plan is claimed to be separated from the Jakarta Bay reclamation project, the controversy over this reclamation project still affects the public perception on the NCICD plan.

When the NCICD plan is mentioned, the environmental issue is the main problematic topic that attracts the attention of public, especially the opponents of the project. The current dispute regarding major environmental impacts that are discussed in public debate will be elaborated in this sub-section.

a. The conflict over mangrove resources

The importance of mangrove forests in Jakarta Bay

Despite aiming safety and economic development as the core value of the project, there are several issues regarding environmental harms that are particularly important in the NCICD plan. The first issue is the existence of mangrove forests that would be heavily impaired due to the project implementation. The proposed closing sea wall will negatively affect the environmental system. The fresh water basin as a result of closing the bay will trigger the degradation of mangrove forest in Jakarta Bay as the plant needs tidal water and salinity to be able to grow optimally (Coordinating Ministry for Economic Affairs et al., 2014). Therefore, considering the dramatic changes of mangrove population in the few decades, the issue of mangrove forests is deemed to be important.

Arifin (2004) explained the importance of mangrove forest in North Jakarta to its surrounding ecosystem in his paper. Mangrove forest in Jakarta Bay provides the following key services within the ecosystem that support the survival of human well-being as well as marine ecosystem: (i) processing and regulation function by providing protection to the coastal area from erosion caused by wind and waves and from saltwater intrusion, and also providing filter function from waste and pollutant, (ii) habitat function by providing natural nurseries for particular fauna (e.g. fish, crab, shrimp, birds, etc) (iii) production function by supplying sufficient nutrient for coastal fisheries, (iv) information function by facilitating tourism and education.

The current condition of mangrove forest

Mangrove forests in Jakarta Bay have progressively deteriorated during these past decades as a result of the pressure from rapid urbanization, economic development, overexploitation for both domestic consumption and commercial purpose, heavily polluted rivers, etc. For decades, mangrove plants have long been used traditionally and culturally by the people who live in the region primarily for firewood, wood carving, building materials, etc (Sukardjo, 1993). As the human population, who lives adjacent to the mangrove forests, is growing, the conflicting uses over mangrove resources is also increasing. Sukardjo (1993) mentioned in his paper that people activities have endangered the existence of mangrove forest through its exploitative use, for example the conversion of mangrove forest into area for brackish-water aquaculture purpose has led to destructive impact of mangrove forest. In the subsequent period, the development of North Jakarta through extensive land-use changes in the late 1980s and in the 1990s had the massive contribution in transforming the mangrove forests into luxurious residential and business complex (Kusno, 2011). The mangrove forests that had a quite large area of 1344 Ha in the 1960s had been severely diminished, thus, from the public perspectives, the attempts by urban developers to globalize the coastline of Jakarta exemplified 'environmental exploitation' and was considered as 'violation of natural preservation law' (Kusno, 2011). Currently, the total area of mangrove forest near the location of proposed project is about 340 Ha and around 180 Ha of the total area is considered as protected area that comprises of 4 main locations: Protect Forest of Angke Kapuk, Wildlife Reserve of Muara Angke, Nature Park Area of AngkeKapuk, and Garden Seeds of Angke Kapuk(Coordinating Ministry for Economic Affairs et al., 2014).

Putting forward the environmental agenda

Over the years, the conflicting uses on mangrove resources have escalated resulting in depletion of mangroves plants in Jakarta Bay. In response to the fact of declining mangroves forests, the environmental agenda associated with the mangrove forests restoration has been advocated by the government and other concern stakeholders.

Mangrove ecosystem services have been highly valued considering the benefits offered for the coastal population and ecosystem, accordingly the government of Indonesia has been pledged to perform rehabilitation program to the damaged mangrove area through the national program called National Action of Land and Forest Rehabilitation (Gerakan Nasional Rehabilitasi Hutan dan Lahan) (Kusmana, 2014). In addition, Kusmana (2014) reported that Ministry of Marine Affairs and Fisheries and other stakeholders (i.e. State Owned Company, private companies) have also demonstrated its concern towards mangrove forest rehabilitation predominantly by means of Corporate Social Responsibility (CSR) program.

Furthermore, as the NCICD plan was introduced to the public, the NGOs and environmentalists are very aware with the negative consequences that might happen after the implementation of the project. It is understandable considering the rapid shrinking of mangrove forests in Jakarta Bay and witnessing the misappropriation of land-use in mangrove area due to the pressure of urban and economic development in the past few decades.

b. Disappearance of island

A study conducting by Research and Development Center of Indonesian Ministry of Maritime Affairs and Fisheries found that the planned outer sea wall would potentially change the circulation pattern of sea current outside the wall, thus it would have the possibility to erode the small islands located in the western part of Jakarta Bay, including Onrust Island (Poernomo et al., 2015). It is important to be noted that Onrust Island is one of the historical sites where many archeological relics from Dutch colonial era can be discovered.

Current condition of small islands in Jakarta Bay is continuing to deteriorate. It was reported that some of the islands in Kepulauan Seribu (Thousand Islands) have totally disappeared due to sand mining which was needed for executing previous land reclamation works. The proposed NCICD plan includes land reclamation that would require large amounts of sand. Therefore, disappearance of island as consequences of sand mining needs to be considered in the proposed project.

c. Waste and water pollution

The construction of the outer sea wall that will close off the sea in North Jakarta may pollute the water retention basin around the wall because huge quantities of waste and pollutions from 13 rivers in Jakarta and the nearby factories will flow into the ocean in North Jakarta. Hence, such condition would potentially harm the marine ecosystem inside the wall.

Additionally, the pollution might also threaten the security value that is offered by this project. The security value here is referred to the issue of water supply. Apart from the main purpose of flood protection function, there is much great concern about water supply issue in the project as well. The idea of having water basin by enclosing the sea is basically an effort to impede excessive ground water extraction through providing alternative water supply. It has been known that the ground water extraction is the main cause of land subsidence and this led to the damaging flood event in 2007. Thus, the responsible authorities addressed this issue in the project and this can be identified from one of the project's objectives which is "to contribute to solving the pressing raw water supply issues of the National Capital". However, the water quality in new retention basin will be poor if there are no mitigation measures to address water quality problem in the existing rivers. Hence, if responsible authorities overlook this problem, the objective of creating the water retention basin to be clean water resources would be extremely hard to achieve.

d. Hydrodynamic Impacts

The current condition of Jakarta Bay shows an increasing rate of erosion and sedimentation. The sedimentation risk mostly affected by the sedimentation outputs from the 13 rivers which are discharged into Jakarta Bay, while increasing rate of erosion is greatly influenced by the consequences of development project in Jakarta Bay (DHI, 2011). Furthermore, the flow pattern of currents and waves affects the distribution of sediment outputs from the rivers, reshaping the coastal area of Jakarta Bay. Hence the construction of outer sea wall that will potentially change the flow velocities in Jakarta Bay may create erosion and sedimentation risks.

6.2.2 The conflict: safety, economic development vs utilities

According to Master Plan of NCICD (2014), underwater infrastructure for example power plants, LNG pipelines, and internet cables are located along the coastline. It is necessary to displace these infrastructures for implementing the dike and lake retention project. PLN (The State Electricity Company) argues that sea water is required for the cooling system in the current power plants, the temperature of the lake will be too high for the power plants (Kristianto, 2014). For energy and communication infrastructures, the implementation of lake and dike will impair the current infrastructures (Coordinating Ministry for Economic Affairs, 2014).

6.2.3 The conflict: safety, economic development vs welfare

The notion of welfare in this analysis is closely related to the welfare described by Friedman et al. (2013), which refers to "people's physical, material, and psychological well-being". From the selected arguments, it is indicated that material welfare is the value that is mostly being referred to. As explained by Friedman & Kahn Jr (2002) in their paper, the material welfare defines as "physical object that human values and human economic interests".

The arguments predominantly refer to the welfare of fishermen. For example, the arguments that consistently articulated by the fishermen association, which is: "The giant sea wall will displace the coastal people, for example, traditional fishermen from their residential. In addition to that, it may terminate their economic activities, especially the fishery sector". The value of welfare is identified in this statement, particularly in terms of the resettlement and occupation of the fishermen. This sub-section will explain in detail the conflict arisen concerning the fishermen livelihoods due to the implementation of NCICD plan.

The vulnerability of fishermen group in Jakarta Bay

North Jakarta coastal area is home to around 20,000 fishermen (Coordinating Ministry for Economic Affairs, 2014b)who depend their life on the availability of marine resources. However, the deteriorating condition of marine ecosystem has an adverse effect on the fisheries activity which is the main source of income for fishermen. It is mainly due to a high level of pollutant produced by industry and domestic sources that directly discharged into the sea. High pollutant level also affects mussel production in Jakarta Bay. The water in Jakarta Bay is heavily contained hazardous amount of lead and mercury, so that Jakarta Government must enforce banning mussel cultivation due to possible health risk of consuming green mussels (Aljazeera, 2014).

Additionally, land reclamation project that is currently underway is accused by the fishermen and NGOs to exacerbate the environmental damage in Jakarta Bay, resulting in significant drop of sea catches (Faizal, 2016). At present, the fishermen have to deal with not only pollutant that affects their catches, but also the construction of man-made island that blockade their sailing area, making them to sail further for catching the fishes (Wijaya, 2016). In conclusion, the combination of these problems intensifies the vulnerability of fishermen in Jakarta Bay that rely on the marine sources to assist their livelihoods.

Legal dispute concerning fishermen rights in Jakarta Bay

Kusno (2011)mentions in his paper that after the end of the authoritarian era in Indonesia, the power of society is increasing, and it leads to more attention for 'social justice' and 'human rights' issues in the implementation of a project. It can also be seen in the development project in Jakarta Bay. This project has to deal with constant protests from public and also legal issue.

Recently, as reported by The Jakarta Post (2016), the group of fishermen filed a lawsuit against Jakarta Administration concerning the construction permit of man-mad islands in Jakarta Bay. The fishermen claimed that the permit which has been issued by the Jakarta Government for constructing an island in Jakarta Bay is illegitimate because the proper procedure of involving fishermen prior the issuance of the permit was not followed. The fishermen also testified to the

court that the project was generally threaten their livelihoods since their income has been sharply declined. The Jakarta Administrative Court ruled in favor of the fishermen. Currently, the fishermen filed another similar case against Jakarta Government.

Anticipated conflicts due to NCICD implementation

Without the implementation of NCICD plan, the conflict between previous development projects in Jakarta Bay and fishermen is already quiet complex and intense. The NCICD plan would have the possibility to exacerbate the poor living condition of the fishermen, the involvement of fishermen is thus critically required prior the implementation of the project. Neglecting the rights of fishermen would also touch the public sentiment, provoking a wave of disapprovals from the public. Therefore, the anticipated conflicts due to NCICD implementation need to be analyzed in order to have better understanding in preventing the detrimental effects on coastal communities.

According to the Master Plan of NCICD (2014), the conflict might be arisen due to these following matters:

a. Resettlement

Resettlement will be required for establishing dike in this project. However, the impact will depend on which intervention that will be undertaken by the policy maker. Resettlement might impact the current lifestyle of societies and affect the social cohesion and structure in these societies (Coordinating Ministry for Economic Affairs, 2014).

b. Fisheries and fishing communities

Fishing activities will get negative impact from the implementation of this project. The access to fishing ports will be hindered by the construction of Garuda and proposed sea wall. Furthermore, the plan of creating large retention lake will turn the sea into fresh water, thus the fishing ground and salt water aquaculture will vanish. It is important to be noted that being a fisherman is an identity for most of the coastal communities, so that changing their profession that has been passed from generation to generation means changing their identity (Muharamiah, 2013).

c. Distributive justice

The arguments listed from the media shows that there is a concern of unjust distribution of costs and benefits, particularly between coastal communities (e.g. fishermen) and new economic actors (e.g. business and affluent communities, developers). The private investors will have a tendency to invest in a project that will maximize their profits and this kind of attitude inclines to marginalize the coastal communities who mostly belong to the low-income group. Thus, there continues to be a strong perception that the project will offer the most benefit to the developers

and affluent communities. Furthermore, the implementation of the project might widen the gap between those two contrasting communities that can spark social friction.

One of the arguments also mentions that huge amount of finances will be required for conducting the NCICD project in Jakarta, however the implementation of flooding mitigation measures in other flood-prone regions in Indonesia is equally important as in the capital city, accordingly it is regarded to be quite unfair in spending large sum of money in the capital city alone.

6.2.4 The conflict: safety, economic development vs port development (economic interest)

The implementation of outer sea wall would have a conflict with the development of Tanjung Priok Port due to disruption in accessibility from the sea. Furthermore, sedimentation in Jakarta Bay as a consequence of reclamation activities that is included in NCICD plan might interrupt shipping activities.

Tanjung Priok Port is the most important port in Indonesia and considered as the backbone of cargo traffic in the country. This port is currently under massive expansion due to shipping congestion that results in declining competitiveness. Thus, construction of outer sea wall would have the possibility to interrupt the economic activities in the port. A synchronize plan between the NCICD plan and port development plan is therefore critically important.

6.2.5 The conflict: safety, economic development vs identity/ culture

The social impact of the project to the coastal communities has become the attention of public.

The concern of value conflicts covers these following areas:

a. The fishermen and maritime culture that can be gradually eroded because of the changing living environment.
b. There is a concern that the project can negatively influence the cultural and social aspect of the coastal communities. It is important to be noted that the fishermen have a good community cultural development. They have a strong bond of kinship, trust, and the willingness to preserve the ecosystem.
c. The authorities have the plan to relocate the coastal communities to low-cost apartment. However, they need to consider that the fishermen do not have the culture of living in a high storey building. As the living environment of the coastal communities is changing, it can potentially cause their culture and tradition to slowly disappear.
d. The social disparity needs to be anticipated between low-income group and new affluent communities.

e. "Development cannot be allowed to exclude people from their culture," she said, adding that the government should have spent years conducting research on the social impacts of the project before deciding to begin construction.

6.3 Chapter conclusion

In this chapter, the stakeholders' value identification of NCICD plan which is mainly derived from the statements of the stakeholders in the media mass is presented. As explained in the previous chapter, there are two main values offered by the NCICD plan which are safety and economic development. These two main values are conflicting with the values of stakeholders which are mainly found from the arguments of the stakeholders in the media mass. The value conflicts that have been identified in this chapter are: **safety, economic development vs environmental protection (i)**; **safety, economic development vs economic and welfare (affected communities) (ii); safety, economic development vs port development (economic interest) (iii); safety, economic development vs identity/ culture (iv); safety, economic development vs utilities (v).**

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7

Conflict Resolution Plan

Despite formal assessment conducted by the Indonesian government and Dutch consultants, the NCICD plan is still controversial in the public domain. The previous literature and also analysis in this research pointed out that there are certain stakeholders who are overlooked in the plan. The analysis of procedural justice values in the NCICD plan also shows that the involvement of stakeholders is still lacking in the plan. Therefore, this chapter presents the suggested approaches as conflict resolution plan on how to deal with conflicting values using the adapted form of existing expert methods with the incorporation of participation method for future improvements.

7.1 Safety, economic development vs environmental protection

As mentioned in the previous chapter, the statement in the newspaper regarding environmental consequences of the NCICD plan has the largest frequencies of statements that were mentioned by varied stakeholders. The statements predominantly contain the negative effects of the NCICD implementation plan. Therefore, it can be concluded that the environmental issue which is the most concern issues in the plan needs a more proper and transparent assessment. In the following sub-sections, the suggested approaches with the incorporation of stakeholder involvement will be further elaborated.

7.1.1 The importance of Environmental Impact Assessment (EIA)

To mitigate the conflict of environmental issue, Environmental Impact Assessment is generally required for large infrastructure project planning which foreseen to cause considerable impact on the environment as part of the formal permitting procedure. There are at least two important issues that can be the rationale of implementing EIA.

Firstly, the construction of sea wall has potentially adverse impacts on the environment and coastal marine habitat. The coastline of North Jakarta is home to some of mangrove forests in Jakarta. The plan for sea wall construction and land reclamation in North Jakarta will possibly disrupt the salinity of sea water and sea tide, thus threatening mangrove plants growth. Likewise, marine habitat will be negatively impacted by the changes of sea water into fresh lake and it can lead to the disappearance of fish species.

Secondly, hydrodynamic and sedimentary process impact. The construction of sea wall and land reclamation are predicted to change the current and wave pattern. The changes of current pattern outside the seawall will likely erode the islands located in the western part, for instance onrust island, which has been acknowledged as the historical site. Meanwhile, the current circulation pattern inside the seawall will be decreased and it can potentially cause the accumulation of sediment from the rivers, thereby creating pollution and increasing the occurrence of eutrophication and the fish mortality.

7.1.2 The need for stakeholder involvement

As stipulated by the Minister of Environment through Regulation No. 17/2012, public participation has been a mandatory part of EIA implementation procedure in Indonesia. The regulation requires three important stakeholders to be involved in the process, including: (1) affected community, (2) environmental interest group, and (3) people who get affected by any decision taken in EIA implementation process. Furthermore, the representative of affected community is obliged to be selected as one of the EIA Evaluation Commission member and be involved in the EIA document evaluation process. The regulation also stipulates that the involvement of public should be incorporated in the EIA implementation process through public announcement before the making of EIA Term of Reference and after the environmental permit has been issued. Figure xx displays the general procedure of EIA implementation process in Indonesia as indicated in the Government Regulation No. 27/2012 concerning environmental permit and Minister of Environment Regulation No. 17/2012 concerning Guidelines on the Stakeholder Participation in Environmental Impact Assessment (EIA) process.

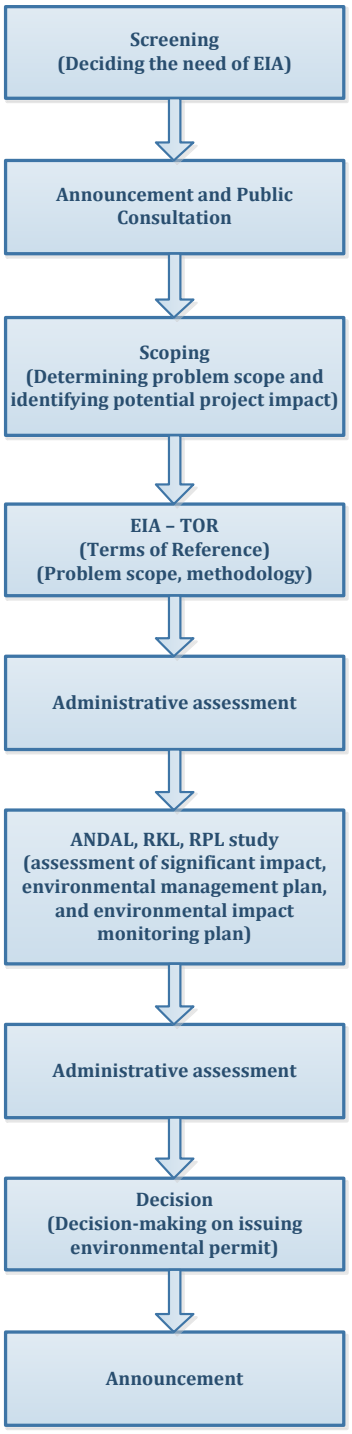

Figure 8 - EIA implementation process

In the initial stage of EIA process, notifying public regarding the project is a compulsory stage in Indonesia. After the notification, proponent of the project needs to conduct public consultation involving (1) affected communities, (2) environmental interest group, and (3) people who get affected by all of decisions taken in EIA. However, according to study by Chen (2013), there are

several problems that hinder the effectiveness of public participation in Indonesia's EIA implementation process. The regulation stipulates that the project proponent should announce the project through media, nevertheless there are rarely feedback from public due to public's inattentiveness to the announcement (Chen, 2013). Furthermore, sometimes the targeted stakeholders do not attend public consultation meeting because of reasons for instance no formal invitation. From the problems described, it seems that proactiveness from public is needed in order to achieve a successful participation. However, it is difficult to obtain a successful participation if the authorities are relied solely on the public's proactiveness. Hence, the responsible authorities and the project developers need to actively involve targeted stakeholders in the participation process which is implemented in several stages of EIA, including initial stage, EIA study, and evaluation stage.

Furthermore, participation issue need to be addressed because in the decision-making process related to environmental impact of a project, the stakeholders, whether they affect or affected by the project, in most cases, have conflicting preferences, thus it is essential to balance the point of views of related stakeholders (Latteman, 2010). The decision-making process typically identifies as a conflict analysis that involves environmental, economic, social and political value judgments in order to quest an agreed compromise solutions considering there are no best solution available (Lahdelma, Salminen, & Hokkanen, 2000). Having different stakeholders' point of views also help the experts to identify the impacts that are unnoticeable. Moreover, Lahdelma et al. (2000) points out the social learning between the experts and other stakeholders as the benefit of involving stakeholders in the process and consequently the stakeholders will have better understanding of a problem. However, involving stakeholders and getting their point of views in the environmental impact assessment process need a more structured and transparent method. Therefore, Multi Criteria Analysis (MCA) which is commonly used in the environmental decision-making can be used as a complementary tool to structure the stakeholders' preferences.

According to Latteman (2010), EIA has the requirements of multi-stage processes, multi-disciplinary processes, multi-participatory processes, and based on predictions. Those characteristics are the reasons why MCA is selected to support the decision process of EIA implementation. MCA has the capabilities to address those requirements to make an EIA better implemented. For example, multi-stage processes mean the EIA has several stages, from the identification of alternatives and environmental impacts, the detail examination of selected alternatives, and the decision to choose preferred alternative. These stages are in line with the MCA method because using MCA can help the process of eliminating, selecting, and ranking the alternatives based on the stakeholder groups' value judgements. The multi-disciplinary processes mean that the processes involve different types of environmental disciplines and studies, socio-economic aspects, etc. In this case, MCA can be used to integrate different aspects from various

disciplines into criteria and compare those criteria based on the weight given by varied stakeholder groups. Multi-participatory processes mean that EIA needs to include wide-ranging stakeholders who can affect and are affected by the implementation of the project. MCA method uses the value judgements of relevant stakeholders to determine the selected criteria, give weight, etc, hence the inclusion of stakeholders in the process is essential. Lastly, the EIA process is based on predictions. It means that detailed information is needed to forecast possible impacts in the future due to the implementation of different alternatives. In MCA process, a sensitivity analysis is conducted to evaluate the rank of alternatives. Thus, MCA could be of help to make EIA better implemented, particularly for the multi-participatory process.

7.1.3 The implementation of EIA incorporated with MCA

Conducting participatory process to gather stakeholders' point of views is an important part of EIA study. Using MCA as a complementary method to EIA can therefore help to facilitate structuring stakeholders' preferences. In this sub-section, the implementation of EIA incorporated with MCA is suggested.

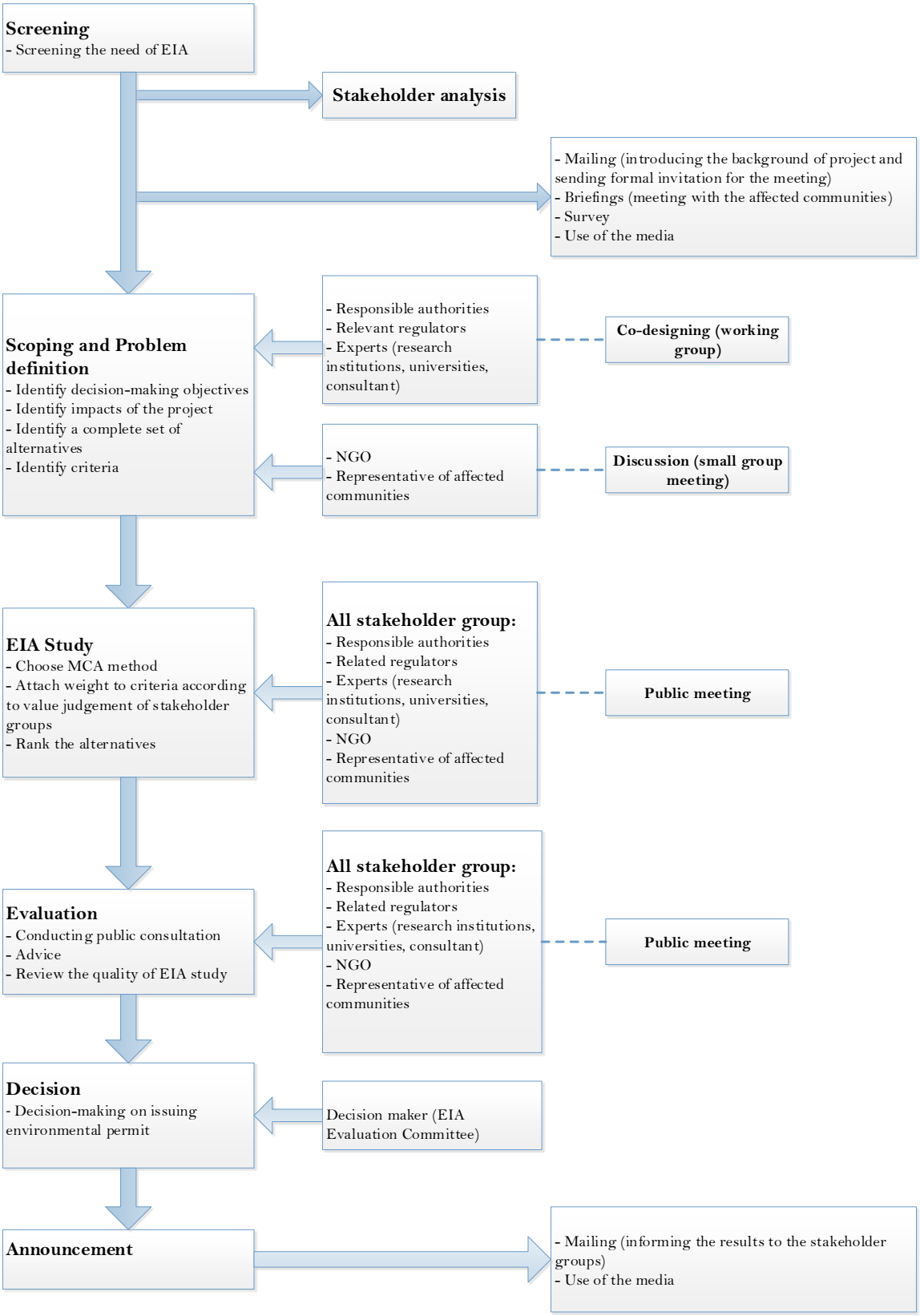

Figure 9 - The implementation of EIA incorporated with MCA

Responsible Authorities

- Government of Jakarta
- State Ministry of National Development Planning (BAPPENAS)
- Coordinating Ministry for Economic Affairs
- Ministry of Public Work

Relevant Regulators

- Ministry of Environment
- Ministry of Maritime Affairs and Fisheries
- Coordinating Ministry for Maritime Affairs

Local Government

- North Jakarta Administration

NGO

- Fishermen NGO
- Environmental NGO

Affected Communities

Experts

- Agency for the Assessment and Application of Technology (BPPT)
- Indonesian Science Institute (LIPI)
- Research and Development Center for Marine and Coastal Resources
- Expert from universities and association:
  - Hydrologist
  - Oceanographer
  - Urban analyst
  - Urban economic expert
  - Spatial planning expert
  - Environmental expert
  - Sociologist

Screening

Screening the need of EIA is the common first phase of EIA implementation. In this phase, the authorized officials will determine whether a project needs an EIA or not. In Indonesia, it is based on the Regulation of the Minister of Environment No. 5/ 2012 which stipulates lists of projects that are mandatory to have EIA. NCICD project features building sea wall and land reclamation which, according to Regulation of the Minister of Environment No. 5/ 2012, is included in the type of activities that needs an EIA as a requirement for implementing the project.

Scoping

After the screening phase, it is compulsory for the proponent of the project to announce general information of the project and conduct public consultation. The information about the project is obliged to be announced through media mass, for example local and national newspaper and through publication board which easily accessed by the affected communities. Furthermore, the information is also usually announced through electronic media, for example television, radio, internet, etc. By delivering the information, public is expected to give written or verbal feedback regarding the project. However, expecting active response from public is difficult. Therefore, it is advised to analyze stakeholders before the announcement and public consultation. The purpose of stakeholder analysis is to specifically target the relevant parties to be involved in public consultation. Based on the stakeholder analysis that has been carried out as presented in chapter

4 ,in the scoping stage of EIA, several groups of stakeholders need to be included, i.e. responsible authorities, experts, relevant regulators, local government, NGO, and affected communities.

After specifying targeted stakeholders and apart from the use of media, it is suggested to inform the targeted stakeholders by means of mailings in which the background of the project is explained and formal invitation for public consultation is delivered. In addition, conducting prior briefings to the affected communities are proposed to make sure that they have sufficient knowledge to be able to actively participate in public consultation. It is also recommended for the project developer to encapsulate previous knowledge and carry out survey to know diverging perception of stakeholders.

In the scoping stage through public consultation, several matters need to be determined. Firstly, the problem scope of the project and the objectives of decision-making process. Secondly, the list of issues and impacts, which need to be reviewed according to their significance. Thirdly, a complete set of alternatives. The output of scoping stage is EIA Term of Reference (TOR), which defines the scope of the assessment and the methodology that will be adopted. The EIA TOR is then assessed by the EIA evaluation commission to evaluate whether the document has sufficient analysis or not.

EIA Study

After the approval from the evaluation commission, the proponent of project is allowed to prepare EIA document. According to Government Regulation No. 27/2012, the proponent of a project should make three types of documents that consist of Environmental Impact Analysis (ANDAL), Environmental Impact Mitigation and Management (RKL), and Environmental Impact Monitoring (RPL). ANDAL is composed of detail analysis of considerable impact due to project implementation. RKL document contains mitigation impact plan in order to prevent or minimize the unfavorable effect of a project, while RPL document consists of monitoring plan to observe components of environment which get affected by a project.

In this stage, MCA can be used to structure stakeholders' preferences. Furthermore, MCA can facilitate the participation of stakeholders in a more organized manner. According to Zarghami & Szidarovszky (2011) and Lahdelma et al. (2000), there are three important elements in any MCA problem. The first one is stakeholders. Stakeholders in MCA problem involve multiple people who possibly have different values, preferences, and objectives. In NCICD case, stakeholders can be categorized into different groups, i.e. responsible authorities, relevant regulators, local government, interest groups, affected communities, and experts. The perspectives of different groups of stakeholders should be recognized in this stage, consequently

the criteria can be identified. Likewise, value conflict among different stakeholders need to be analyzed due to different importance that stakeholders imposed on the criteria.

The second one is alternatives. Alternatives are potential options that are identified by the stakeholders and would be assessed based on the identified criteria list. Viable alternatives usually consist of: do nothing alternative, the preferred alternative by the proponent, the alternatives endorsed by other stakeholders, and also the alternatives which are generated from the discussion among stakeholders during the process. The latter options might be more beneficial than the existing alternatives because it can be seen to depict the deepened comprehension of a problem and more innovative alternatives might be created (Lahdelma et al., 2000).

The current alternatives proposed by the proponents and also their preferred one are depicted in figure 12. Figure 12 shows that the preferred alternative of the proponent of the project is the offshore protection solution comprising of the outer sea wall and 1250 ha reclamation. The preferred alternative is chosen based on the conducted business case in which the result of this option has a positive net present value (Coordinating Ministry for Economic Affairs, 2014a). Furthermore, this alternative is selected due to its limited risk concerning the economic development and can be implemented with the current availability of sand (Coordinating Ministry for Economic Affairs, 2014a).

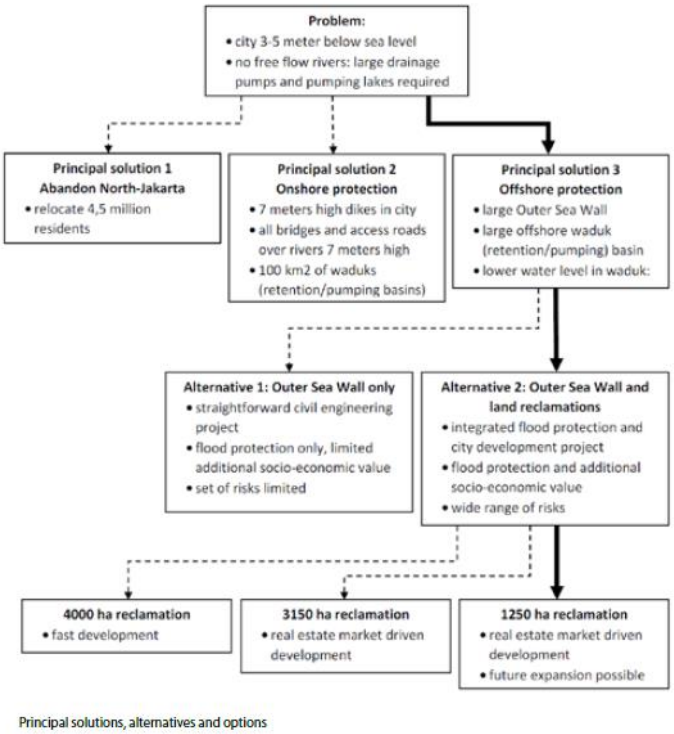

Figure 10 - Current principal solutions, alternatives and options (Master Plan NCICD, 2014)

The preferred option by the proponent of the project seems to be selected based on the economic perspective as the primary consideration. However, it is also important to include environmental perspective to assess the feasibility of the selected alternatives through the implementation of EIA. The current alternatives include the do nothing alternative, the do nothing alternative with small adjustments and the preferred alternative by the proponent of the project. These alternatives could be the initial alternatives, however during the EIA process, it is possible that the stakeholders involved would add other alternatives in concordance with their differed interests. The alternatives proposed by involved stakeholders should be considered as a sign that the stakeholders engaged have more understanding regarding the problem. The included alternatives also make the stakeholders feel more involved in the process.

Last important element of MCA is criteria. The identified criteria are usually used to measure or rank the predicted impacts caused by the implementation of the alternatives. In MCA, the alternatives need to be selected based on the performance with regards to the criteria in which the alternatives are measured by giving scores, whether the scores in the form of quantitative scales, qualitative scales, or binary scales.
Based on the collected arguments from newspaper and conducted interviews, there are several important factors that need to be considered as environmental criteria in the EIA of NCICD case:

- The damaging effect of NCICD plan to mangrove forests and coral reefs.
- The disruption to the existence of salt water aquaculture because of the implementation of fresh water retention and damaged mangrove forests and coral reefs.
- The impact on the hydrodynamics (the changes of the current and wave pattern) due to the implementation plan of sea wall.
- The impact on coastal morphological process, including erosion and sedimentation process that is affected by the changes of current and wave pattern, the sedimentation concentration from the rivers, the reclamation, etc.
- The water quality degradation inside the retention lake due to the polluted rivers, measured by the changes of the environmental parameters, e.g. Biological Oxygen Demand (BOD), Dissolved Oxygen (DO), and water salinity.
- The disruption to the environmental infrastructure due to sand mining for the reclamation.
- The impact on the small islands, for example the possibility that onrust island could be eroded, etc due to the changes of wave pattern.
- The impact on land subsidence. There are 2 (two) opposite sides of opinions which are expressed by related stakeholders. Firstly, the project will be the solution for land subsidence. Secondly, the project will exacerbate land subsidence problem.
- The decline of maritime tourism potential from a damaged marine environment.

7.1.4 Public Participation Method

In chapter 6, the informed consent criterion for this case were evaluated by analyzing the arguments from stakeholders in the media. The general conclusion that can be drawn from the arguments is that the stakeholders, particularly the affected communities and public, have little information regarding the project due to lack of publication and communication with the related stakeholders. This informed consent criterion in EIA implementation can be addressed in the earlier phase of EIA by using several participation methods.

Before scoping and problem definition stage, several methods can be used to inform the public about the project. Use of media, for example media mass and electronic media to publicize the project is a compulsory step in EIA implementation in Indonesia, however it is recommended to add other methods of participation, for example sending mails to related stakeholders that contain a brief project background, briefings that involve meeting with the affected communities, and survey that has the objective to get the general perception of related stakeholders.

The scoping and problem definition stage includes public consultation as required step of EIA in Indonesia. Several groups of stakeholders need to be involved in the public consultation stage, i.e. responsible authorities, relevant regulators, experts, NGOs, and affected communities. It is suggested to divide the stakeholders into two groups: (a) First group: responsible authorities, relevant regulators, and experts (research institutions, universities, and consultant), (b) Second group: NGOs and representative of affected communities. The group is divided based on the expected level of participation. The first group is expected to take an active part in designing the list of potential impact, alternatives, and criteria, thereby co-designing role is suggested. The proposed method of participation is working group where the large group can be divided into smaller groups of different expertise. Each group should have the representative from responsible authorities, relevant regulators, and experts who have the relevant expertise. Meanwhile, the opinion of the second group that consists of NGOs and affected communities, can be sought by having discussion with them through small group meeting and facilitated by the expert.

After the information from the stakeholders is collected, the criteria and alternatives need to be established by the project consultant and the experts. Furthermore, the experts' judgement is needed to establish the scores of each alternative on criteria. The selection of MCA method is then specified, and new round of participatory process needs to be conducted. The participatory process in this stage may address the problem of transparency and involvement issues as pointed out from the statements of related stakeholders. For example, the fishermen NGO, KIARA, stated that the decision-making process of the project is non-transparent. It means that the process fails to meet the transparency criteria of participation. While, other stakeholder commented on the planning process of the project which only involves the elite and does not portray a democratic

and inclusive planning. In this case, these transparency and involvement issues can be addressed by implementing MCA method in which the participatory process is compulsory to be included.

After the alternatives, criteria, and scores are established, the next step is conducting a public meeting involving all related stakeholders. In this stage, the MCA method is used to elicit the stakeholders' preferences. The key agenda of this stage is generating the weight that depicts the value judgment of stakeholders and assigning it to the different criteria. The weight is used to rank the alternatives. The weights reflect the personal preferences of stakeholders regarding the project in which the transparency of decision-making process is likely to increase.

The next stage is the evaluation stage. The participation in this stage has the objective to review the quality of EIA study through public meeting involving relevant stakeholders. Finally, the last stage is announcement. The level of involvement in this stage is inform. It means that the stakeholders should get the access to information regarding the EIA result.

7.2 Safety, economic development, cost-recovery vs economic and welfare (general) vs utilities

7.2.1 Why CBA?

One of the most frequent values that were expressed by the government in public debate regarding the NCICD project is the economic value and in particular about financial aspect of the project. The example of the arguments in order to understand the value identification of financial aspect can be seen as follows:

Argument 1:

"The government opens to exploring the option of land reclamation development around the Giant Sea Wall project as the resource of return on investment considering the huge investment that needs to be expended by the government" (Ministry of Public Works, 2013).

Argument 2:

"The development of the project will use the PPP scheme, allowing the participation of private and government state owned companies. By using the PPP scheme, the share of the government in financial contribution is not large, although the contribution is estimated more than 5%" (Coordinating Ministry for Economic Affairs, 2013).

Argument 3:

"The added contribution of 15% from the reclamation project developer can be used to construct the NCICD project. Jakarta Government also has the rights for about 5% from the reclamation land to build public infrastructures. The development will use this added contribution" (Jakarta Government, 2016).

Massive investment and involvement of government are required for the implementation of large infrastructure project. This is also applied to the implementation plan of flood protection infrastructure in NCICD plan. From those example arguments, it can be seen clearly that the government intends to involve private investors to financing part of the NCICD plan. Because of its huge investment to realize this project, the plan is to generate the revenues from the urban development project to funding the NCICD project, thus the combination of public funding and the revenues generated from private developers is intended to be adopted. This also can be said that the government tries to do cost-recovery scheme. Cost-recovery means that the government does not have to bear all of the cost needed for the services provided by the government. In return, the private parties who get the benefit from the services need to contribute share of the cost. In this case, the service provided by the government is sea wall and the private developers who build the reclamation land derive the benefit from the service, therefore financial contribution to build the sea wall is expected from them.

It is quite evident that the economic factor is the main issue in the conflicting values between the government and private developers. The government emphasizes the need of financial contribution from the private developers, while the main objective of private developers is maximizing their profit, hence applying Cost-benefit analysis (CBA) is recommended for mitigating the value conflict. CBA is an economic project assessment that generally used as an instrument to help the decision-making process of large infrastructure project by evaluating significant parameters on an investment or policy plan based on the appropriate economic factor. According to Eijgenraam, Koopmans, Tang, & Verster (2000), CBA can be a tool for comparing and evaluating different options of investment that would be beneficial for deciding appropriate government and private developers' contributions. Furthermore, CBA does not only consider the economic aspects of the project, but also taking into account the social aspects of the project. It is also important to see the distribution of benefits and burdens across different groups of relevant stakeholders, particularly the communities who will get affected by the project. CBA can give judgment about the distribution of costs and benefits among different stakeholders.

Discussing about the distribution of costs and benefits, it cannot be separated from the coastal communities. The arguments in the media expressed by several actors show concern regarding

unjust distribution between coastal communities and new economic actors. The sample of the arguments is depicted in these following statements:

Argument 1:

"The project to be a bad investment with the losses incurred by citizens outweighing the benefits. The losses incurred by Jakartans are three times more than the investment earmarked" (Fishermen NGO, 2012).

Argument 2:

"I am also worried that the islets would only cater to the interests of businesses and affluent communities,' she said, adding that she was afraid that the promise to provide public access to the islets was mere lip service" (Urban Development NGO, 2013).

Argument 3:

"The construction of Giant Sea Wall will boost the property business for middle and upper-class citizen, specifically in North Jakarta area" (Infrastructure Analyst, 2014).

Those three arguments are the sample that implies the skepticism of several actors regarding the beneficial effects of the project, particularly for the affected communities. Those actors perceive that the project has the tendency to offer more benefit to the new economy actors, for example developers and affluent communities, hence disparity of cost and benefit distribution might occur. As stated in the previous paragraph, CBA can be a helpful tool to see the distribution of cost and benefit among group of stakeholders, therefore CBA can be an aid to assist the decision-maker to transparently explain the cost and benefit of the project to the varied stakeholders.

7.2.2 CBA and stakeholder participation

Stakeholder participation in a CBA process might support the acceptability of the result. The positive result of CBA might still get opposition if the relevant stakeholders feel that their interests have not been taken into consideration and also the stakeholders perceive that the distribution of costs and benefits among different stakeholders is biased towards particular stakeholders. In the NCICD plan in which varied stakeholders affect and get affected by the project, CBA can be a media for more interactive interactions among stakeholders in order to collectively identify scientific and technical questions, reconcile different interests, and build a common understanding of the project. Furthermore, stakeholder participation in CBA process might address the procedural justice problem during the decision-making process of NCICD project, including transparency, trust, involvement, and informed consent.

The participation of stakeholders in CBA is of great importance in the several stages of the process. The interactive interaction process that includes decision makers, experts, and other relevant stakeholders should be taken place in these following stages of CBA:

1. Formulation of problem

   The participation of relevant stakeholders in this stage is essential to ensure the inclusion of relevant problem formulation for varied stakeholders. The relevancy of problem formulation for one actor might be different to other actors. These differences arise because the actors have different problem perception. In this stage, stakeholders might compete for their problem perception to become priority.

2. Identification of project alternatives

   This step is the identification of considered project alternatives in order to address the problem which has been previously specified. In this stage, the role of expert is critical for recommending project alternatives which would be assessed. Furthermore, aside from the economic feasibility, experts from relevant field of the project need to ensure that the alternatives meet technical standard, for example safety and environmental standard. Meanwhile, to secure that the alternatives would be beneficial for the society, other stakeholders should be given the opportunity to accept the listed alternatives or propose new alternatives.

3. Identification of project impacts

   In this stage, the involvement of varied stakeholders would have the benefit to reduce the risk of neglecting crucial undisclosed impacts. The experts are equipped with the objective information, while other stakeholders have their own perspective on socio-economic impacts of the project. Therefore, the role of experts is important to facilitate the process, integrate, and negotiate the local knowledge, thus different groups of stakeholders can compromise on the possible effects of the project.

7.2.3 The implementation of CBA

1. Problem Analysis

   This stage should include a discussion with varied stakeholders in order to identify their concern regarding the condition of North Jakarta. There are several questions which can serve as guidelines for analyzing the problem: What are the problems now and what is the effect in short and long terms which need to be solved? (i) What is the root cause of the problem? (ii) What solutions can be offered to solve the problem? (iii) Who is affected by the problem?

In the current CBA report of the project, the problems mentioned in the report is the increasing flood risk which is mainly caused by rising sea level, river discharge, and land subsidence. As indicated in the report, the driving force of rising sea level and river discharge are climate change, while land subsidence is caused by natural forces, groundwater extraction, and building loads. This problem might be true for the proponent of the project, however the discussion with other stakeholders, for example the community who get affected by the project and also other experts who have expertise in the related field, needs to be conducted. The community who lives around the proposed location of the project might have different problem perception. As pointed out in the interview, the people do not recognize flooding as a problem. Furthermore, since the financial resource of the project is partially depended on the private developers, the inclusion of private developers is regarded as a necessity.

The inclusion of relevant stakeholders in this stage becomes a required step because problem for one actor might be less attractive to other actors. Therefore, a broad problem formulation is preferable to include the interests of wide-ranging actors.

2. Identification of project alternatives
   In this stage, the role of stakeholders is important to obtain their key values which are beneficial for the development of project alternatives. The key values of the involved stakeholders can depict the concern of stakeholders regarding the project. The key values of the stakeholders and problems that have been identified in the previous stage can be a starting point to develop project alternatives.

   The involvement of local knowledge might enrich the alternative formulation. However, the possibility that the knowledge among stakeholders is asymmetric is quite high. This knowledge asymmetric can be a hindrance to the effectiveness of participation. Therefore, transferring the information, knowledge, and technical issue of the project and also informing the feasible alternatives to laymen is important. The role of experts, in this part, can be vital particularly to ensure that the technical issue and information regarding the project can be fully understood by other stakeholders and the aspiration of the people can be incorporated in the possible alternatives. Otherwise, there will be unequal information regarding the project. Additionally, the experts need to ensure that the required technical standards are met, in this case, safety and environmental standard.

3. Identification of project impact
   In this stage, the involvement of stakeholders who get affected by the project would be a central element to evaluate the effects of proposed alternatives. The variables to evaluate the

proposed alternatives can be derived from the key values which define the concern of affected stakeholders. It is important to see the impact from different point of view, for example the experts and affected stakeholders, in case the analysis which has been made by the expert does not fully cover the concern of other stakeholders. From the key values which have been identified in the previous chapter, those key values can be the reference to determine the costs and benefits of the project.

The CBA project report can be access publicly from the dedicated website of the project. In the report, the list of project's costs and benefits along with the description on how to evaluate each costs and benefits is presented. The summary of costs and benefits list of the project can be seen in Table 7.

Table 8 - Present value costs and benefits, discount rate 7%
(Coordinating Ministry for Economic Affairs, 2014a)

	JCDS 2020	JCDS 2030	Open bay	Closeable bay
Costs				
Coastal defence measures 1)	-9.2	-8.4	-1.3	-4.9
Land acquisition and resettlement	-6.6	-5.2	-7.3	-6.6
Regulation water level freshwater lake (pump capacity)	-0.7	-0.5	0.0	-0.5
Additional costs faster implementation sanitation	-3.7	-2.	0	0
Other (external) costs (e.g. fishery, environment)	PM --	PM --	PM -	PM --
Total costs	***-20.1***	***-16.2***	***-8.6***	***-11.9***
Benefits				
Flood risk reduction 1)	0.8	0.8	0.8	0.8
Prevented losses permanent inundation 2)	102.5	102.5	102.5	102.5
Savings polder management 3)	0.6	0.7	0.0	0.0
Savings flood protection land reclamations 4)	0.6	0.0	0.0	0.0
Freshwater supply	PM+	PM+	0	PM+
Potential Other (co-)benefits				
Benefits from land rents 5)	2.1	1.	0.7	1.3
Transportation benefits	PM++	PM++	PM+	PM++
Port development	PM+	PM+	0	PM+
Additional net investment/ economic activity	PM+	PM+	PM+	PM+
Total benefits	***106.6***	***105.2***	***104.0***	***104.6***
Benefits-costs (=NPV)	***86.5***	***89.0***	***95.4***	***92.6***

1) excluding costs for all other infrastructure
2) assumption is that all alternatives are fulfilling safety
3) costs savings retention area, pump capacity
4) planned and new area
5) new 'liveable' dike area

As mentioned in the previous paragraph, the key values of the stakeholders can be the reference to determine the impact of the project. Thus, the comparison between the key values of the stakeholders which have been identified in the previous chapter and the list of costs and benefits from the CBA report can be made to examine whether the key values of the stakeholders are covered in the current CBA report. From the identification, there are several concerns of the stakeholders which are not considered in the report. For example, several stakeholders pointed out the sedimentation risk and abrasion as the negative consequences. These following statements are the examples of stakeholders' concern regarding the sedimentation risk and abrasion impact due to the implementation of the project.

Statement 1:

> "The central government and city administration's plan, which would 'solve' the issue with a giant sea wall, would only 'exacerbate the problem'. The islets might even trigger new problems as they could alter the sea's current, which would cause **abrasion** along other coasts." (Rujak Center: Elisa Sutanudjaja (city planning watchdog), 2013).

Statement 2:

> "The outer sea wall would decelerate water debit in the river, hence it may cause river sedimentation. To alleviate the sedimentation problem, more investment to finance the normalization for river bed sediment is needed." (The People's Coalition for Fishery Justice (KIARA): Abdul Halim, 2014).

Statement 3:

> "….the decline of maritime tourism potential from a damaged marine environment and abrasion at Banten Bay and along the northern Java coast due to ongoing sand mining for the reclamation." (The People's Coalition for Fishery Justice (KIARA): Abdul Halim, 2014)."

Those three statements are the examples of concern that were mentioned by the stakeholders. The first and third statements indicate that the project might cause abrasion along the coast and there would be further consequences due to abrasion, for example the downturn of maritime tourism potential. While the second statement points out the river sedimentation risk due to decelerate river water debit, and hence there would be more financial investment needed to mitigate the river sedimentation problem. For this concern, it is recommended to involve the representative of relevant NGOs and experts to delineate the impacts of sedimentation risk and abrasion and subsequently estimate the decline of tourism potential, the required financial investment to alleviate the problem, and other relevant costs needed due to sedimentation risk and abrasion problem.

Required sand material

The second concern which has not been addressed in CBA report is the required sand material for land reclamation.

Statement 1:

Indonesian Ministry of National Development Planning: Basah Hernowo

"……The plan of Jakarta Government to develop 17 artificial islets would require hundred million cubic meters of sand. Consequently, the amount of sand needed for reclamation work would be increasing for the NCICD project. When Indonesia exported sand to Singapore in 2007, two islands, which are Nipah Island and Sebait Sempat, were disappear due to sand mining. Reclaimed land where the fill materials are sand dredged from nearby seabed will negatively affect the environment, thus I question the feasibility study. If it is not from seabed, the fill materials can be excavated from inland soil in Tangerang region, however it will interfere the hydrological system balance."

Statement 2:

The Indonesian Forum for Environment (WALHI)

"For each hectare of reclamation land will need 632.911 m^3 of sand. If it is multiplied by the planned reclamation land of 5.153 ha, it will need around 3,3-million-ton cubic meter of sand. Dredging sand from other area will disrupt marine ecosystem of the area. It may trigger conflict with the local fishermen, for example the fishermen in Lontar, Serang-Banten"

Statement 3:

Ministry of Environment: Nabiel Makarim

"The problem is, where will the sand for the reclamation come from? The Economic Coordination Ministry once said that the waters off Jakarta could only supply a third of it. Nobody knows where the rest will come from. This shortage of reclamation material has long been a source of concern, and is the reason why Nabiel Makarim, environment minister from 2001 to 2004, issued a ruling rejecting the Jakarta Bay reclamation. He believed that if the sand was taken from Java's north coast, the damage would extend from Pandeglang, Banten in the west to Losari, Indramayu, in the east, an area of 170,000 hectares. In this region, the ecosystem would be ruined, water flows would change, and small islands would disappear."

The required sand material for land reclamation is not evaluated in the CBA report. It may because the land reclamation is projected to be financed by the private developers. However, NCICD master plan includes land reclamation as part of the project. Therefore, several stakeholders mention the shortage of sand as their concern. Additionally, the impact of sand

dredging for land reclamation is quite harmful to the environment. Several stakeholders indicate the damage of marine ecosystem, the changing of water flows, and the disappearance of small islands as the adverse effects of sand dredging. Further, one of the stakeholders also make a remark about the conflict which might be occurred with the local fishermen due to the deterioration of marine ecosystem condition.

The change of hydrodynamics pattern

Statement 1:

Research and Development Center for Marine and Coastal Resources: Taslim Arifin (Expert)

> "The results showed that the wall would affect the sea currents outside the wall, so it could potentially erode the islands in the western part of the bay, including Onrust Island,' he said, adding that the island could eventually disappear."
>
> "Onrust, like other islands such as Kelor and Cipir, is a historical site and has been declared an archeological park."

Statement 2:

Environmental NGO - The Indonesian Forum for Environment (WALHI)

> **"**…. The growth of coral reef in Kepulauan Seribu would be disrupted due to pollutant and sedimentation. The disruption of coral reef growth would be more severe with the increasing changes of hydrodynamic pattern and it would hit small islands in Kepulauan Seribu. The changes of hydrodynamics pattern would erode the island cluster of Kepulauan Seribu, hence it would corrupt the islands. Furthermore, the islands might be disappearing because of the changes. One of the historical islands and might get impacted is Onrust Island. Onrust Island is the historical site in Indonesia."

One of the adverse effects of sea wall development is the change of current circulation pattern or hydrodynamics pattern. The two statements mentioned above explain that the wall would affect the sea current outside the wall. The sea current circulation pattern outside the sea wall would erode the small islands in the western part of the bay. Several stakeholders raise their concern regarding the small islands which might be disappear due to this sea current pattern changes. The other concern is that the island which may be affected is Onrust Island. This island is the protected historical site in Indonesia where the significant archaeological sites remain intact since the Dutch colonial period. It can be concluded that there are two issues pointed out by the stakeholders. Firstly, from the environmental perspective, the change of sea current pattern

would disrupt the ecosystem. Secondly, from the social and economic perspectives, one of the historical sites and potential tourism might be damaged because of the changes.

The decline of maritime tourism potential

The CBA report has addressed the issue of negative environmental impact, for example the damage of marine environment, due to the implementation of the project. However, the representative of fishermen NGO points out the downfall of maritime tourism potential as the consequence of damaged marine environment. Furthermore, the sand mining work for the reclamation leads to the abrasion along the northern Java coast and it thus indirectly can also cause the decline of maritime tourism industry. The decline of maritime tourism potential has not been covered in the current CBA report and hence need to be evaluated in the analysis as the external effect of the project.

The disruption of existing infrastructure (power plant, telecommunication cable, LNG pipeline)

The construction of sea wall might disrupt the access to cooling water for the Steam Power Plant Muara Karang. The steam power plant harnesses sea water to cool the steam for more effective and efficient electricity production. One of the alternatives to avoid the disruption is to relocate the power plant. The relocation of steam power plant would need a large investment, and it needs to be calculated in the CBA. The current CBA report has calculated the amount of sunken investments lost when relocating the Power Plant. Apart from the power plant, there are other existing infrastructures were located under the sea near the planned reclamation land and sea wall. These existing infrastructures have not been evaluated in the CBA report. For example, there are many telecommunication cables which might be negatively impacted by the construction of planned reclamation land and sea wall. The worst consequence is the communication might be severely cut off. This impact should be included in the CBA. There are also LNG pipeline planted under the sea around Jakarta Bay. This pipeline is used to transport LNG to Muara Karang and Tanjung Priok Power Plant as their fuel to generate electricity. The disruption which might be occurred to the LNG pipeline due to the implementation of NCICD should be considered in the CBA report.

Table 9 - The coverage of key values in current CBA report

Key value	Theme	Coverage in CBA report (Yes or No)		Stakeholder
Environmental	Sedimentation risk and abrasion	No	The outer sea wall would decelerate water debit in the river, hence it may cause river sedimentation. To alleviate the sedimentation problem, more investment to finance the normalization for river bed sediment is needed.	Environmental NGO, Fishermen NGO, City planning NGO, experts
	Decreasing water quality due to stagnant freshwater	Yes	speed up investments in sewerage and sanitation to bring the water quality to an acceptable level	
	Degradation of mangrove ecosystem, coral reef, and other marine habitats	Yes	Included in the external impacts of the project	
	Required sand material	No		Environmental NGO, Ministry of Environment
	The change of hydrodynamics pattern would result in the disappearance of island	No		Environmental NGO, experts
Economic and welfare	The decline of maritime tourism potential from a damaged marine environment and abrasion at Banten Bay and along the northern Java coast due to ongoing sand mining for the reclamation	No		Environmental NGO, experts
	The project would result in further evictions of fishing Jakarta's fishing communities. (Resettlement)	Yes	Included in land acquisition cost	
	Port activities and development	Yes	Included in other potential (co-) benefits	

	Access to coastal resources	Yes	Included in land acquisition cost. The access to coastal resources indicate the possibility that the fishermen communities would have difficulty to access the coastal resources which are their main source of income. In the current CBA, the land acquisition cost considers the cash compensation level for people who are relocated to environments where their productive skills may be less applicable and competition for resources greater.	
	Occupation	Yes	Included in land acquisition cost. In the current CBA, the land acquisition cost considers the compensation level for people who face impoverishment when their productive assets or income sources are lost.	
	Cost-recovery	Yes	Included in other potential (co-) benefits (Benefits from the land rent)	
	Fish ports and communities	Yes	Included in the calculation of external costs of the project	
	Urban development	Yes	Part of the benefits from urban development are covered in other potential (co-) benefits, for example benefits related to Toll roads (and other transportation infrastructure)	
Social	Social structure	Yes	Included in land acquisition cost. In the current CBA, the land acquisition cost considers the compensation level for community institutions and social networks who are weakened due to resettlement.	

Utility	existing infrastructure (telecommunication cable, power plant, LNG pipeline)	Yes, partially	Steam power plant Muara Karang is briefly discussed in the current CBA. The access to cooling water for the steam power might be disrupted due to the outer sea wall. The report discusses a significant investment needed for relocating the power plant or constructing pipeline for transporting the water to the power plant. However, the report also discusses the reaped benefits from the possibility to transform the current land used into residential area. On the other hand, the issue of telecommunication cable and LNG pipeline is not evaluated in the current CBA.	Indonesian Association of Submarine Communications Cable, PT. PLN (Persero)
Security	Water supply	Yes	Included in benefits of freshwater storage by avoiding costs for alternative freshwater supply	
Identity	Fishing culture	Yes	Included in land acquisition cost. In the current CBA, the land acquisition cost considers the compensation level for the diminishing of cultural identity.	
Safety	Againts flooding	Yes	Included in benefits of the coastal protection (adaptation measures) primarily consist of the avoidance of damage to buildings and other capital, productions losses during flooding and reconstruction, and casualties.	
	Fishing activities	No		Fishermen NGO, affected communities

4. Calculation of benefits and costs of project

   This step mainly consists of the quantification process of the project impacts into monetary terms. After that, the costs and benefits of the project for each scenario are compared to see which project would give the most benefit. This stage is mainly about the analysis of cost and

benefit of the project; therefore, this step can be done by the CBA expert without the involvement of other stakeholders. After the analysis is completed, the experts can inform the results to the relevant stakeholders in order to see the stakeholders' respond to the analysis and get the acceptance from the stakeholders.

5. Sensitivity analysis
   The sensitivity analysis is completed to improve the robustness of CBA analysis by varying the discount rate. The sensitivity analysis can be done by CBA experts without the involvement of other stakeholders.

7.3 Safety, economic development vs economic and welfare (affected communities), culture/ identity

The conflict between safety, economic development and economic & welfare of the affected communities might be arisen because of the NCICD implementation. The VSD method is suggested to mitigate or minimize conflict, for example the construction of sea wall would limit fishing activities, and hence would hamper the economic and welfare of the affected communities, therefore the design of sea wall should be adapted to allow the transportation of fishing activities. Hence this approach can be applied to trade-off the value conflict through three stages of investigations:

7.3.1 Conceptual investigation

In the conceptual investigation, Social Impact Assessment (SIA) can be incorporated into this stage to help identifying interested and affected stakeholders and collecting baseline data. SIA is the analysis process of intended and unintended impacts, particularly social impacts of an infrastructure project on the affected stakeholders. There are several important steps in implementing SIA which has been adapted from Social impacts of large dam projects: A comparison of international case studies and implications for best practice (Tilt, Braun, & He, 2009). In this step of investigation, the initial stages of SIA can be adopted as follows:

1. Identifying interested and affected stakeholders
   The first step which needs to be conducted in SIA is the identification of interested and affected stakeholders. In the NCICD case, the stakeholders who might be involved are relocated communities, fishermen, businessmen in small and medium fish processing industries, and interest groups who concerned about environment and the livelihoods of affected communities who live along the coast.

2. Collecting baseline data

   Before the implementation of stakeholder participation, baseline data can be collected by compiling primary data from survey or interview and secondary data from published newspaper, published literature, official published reports, etc. Baseline data will be used as initial information to gather more viewpoints from the interested and affected stakeholders.

7.3.2 Empirical investigation

In the empirical investigation, Social Impact Assessment (SIA) can be incorporated into this stage to help identifying the values at stake and the effect of the project to the affected communities. In this stage, the following steps of SIA are adopted:

3. Assisting the implementation of stakeholder participation

   The representatives of identified interested and affected stakeholders should be included prior the implementation of a project. The objective of stakeholder participation is to get local support and minimize the resistance particularly from the affected communities and interest groups. In this NCICD project, the stakeholder participation also has the purpose to get the perspectives of the stakeholders and identify the values rendered to be important for the stakeholders. Discussion is recommended to be held with the affected communities and interest groups by organizing small group meeting with the communities. In the meeting, the project consultant will introduce the objective, plan of the project, and also the impacts that affect the livelihood of the communities. After a comprehensive explanation of the project, the point of views from the communities and interest groups regarding the likely impacts of the project should be collected. Based on the point of views from the communities and interest groups, the relevant values which are important for them can be acquired. From the meeting, the project consultant might also discuss the current condition of livelihood and environment of affected communities, the problems that need to be solved, and the ideal situation that wish to be achieved by the communities. This information may be useful to design a technical infrastructure which considers the stakeholders' values and also improves the condition of the communities.

4. Predicting the possible impacts and the respond of the stakeholders

   From baseline data and stakeholder participation, the project consultant can list possible impacts which might happen due to the implementation of the project and the respond of the stakeholders because of the impacts. These following lists are the examples of possible impacts on the communities due to NCICD project implementation:

   a. Resettlement/ Relocation

The implementation of NCICD plan would need to relocate affected communities from their home. Resettlement is a difficult process because it may change the lifestyle of affected communities and may have an impact on social cohesion and structure. Further, the fishermen and maritime culture and tradition can be gradually disappear because the changing of living environment. If there are alternatives which the communities think are acceptable, the communities might be less resistance to the process.

b. Fisheries and fishing activities

NCICD project includes the plan of creating large retention lake that would turn the sea into fresh water, thus there is possibility that the fishing ground and water aquaculture would be disappear. The possible impact is that the fishermen may need to change their job. However, this will be a difficult task because the fishermen only have the skill of fishing. In addition, changing their profession is the same as changing their identity.

Furthermore, the access of fishing port would be disrupted because of the construction of sea wall. It will negatively affect the activity of fishermen and also business activity of small and medium processing industry. Therefore, the relocation of fishing port needs to be assessed by considering the location which would be easily accessed by the fishermen and the businessmen.

c. Distributive justice

The unjust distribution of costs and benefits has become a concern which mentioned by the interest groups, particularly between coastal communities and new economic actors. The social disparity needs to be anticipated between low-income group and new affluent communities. The project planner should consider the possibility of social friction which might be sparked because of the gap between low-income group and new economic actors.

7.3.3 Technical investigations

The technical investigation stage is the stage where the technology is designed by incorporating key values of relevant stakeholders. The following stage of SIA is identifying possible alternatives. This stage can be included in technical investigation of VSD. From the previous stages of SIA, the basic values which are important for the stakeholders have been collected. These values are the basis for the project consultant, authorities, experts, and other relevant stakeholders to design an infrastructure which considers communities' values. This step is recommended to involve

relevant Ministries, research institutions, universities, and experts to jointly co-designing the suitable infrastructure based on the communities' values. These following lists are the examples of the problems which have been recognized and need to be mitigated by designing an appropriate infrastructure:

1. Resettlement

   In the Masterplan of NCICD, building an affordable social housing is one of the development strategies to improve the living condition of the communities and also to create sufficient space for developing dike. The plan is to create a new urban village in the new reclaimed land and relocate the communities into this village. However, there are concerns that need to be taken into account in designing housing for the coastal communities.

   - The communities have strong connection with the sea because they basically depend their life on the sea, thus the proximity of their settlement to the sea is very important. The interviewee pointed out the experience of relocation due to government's project. The distance of the flats provided by the government is quite far from their workplace, thus it becomes burden for the people because they have to spend more money for the transportation cost. Therefore, the location of the social housing and the proximity of the housing to the sea are the criteria that need to be prioritized in designing the social housing for the communities.
   - The fishermen have a good community cultural development and a strong bond of kinship with their neighborhood. The plan is to relocate the coastal communities into low-cost apartment. However, the communities do not have the culture of living in a high storey building. The coastal communities used to live in a low-rise building with no limitation in interacting with others in their communities. Living in a high rise building will definitely decrease the interaction intensity with their communities, thus there is a concern that their culture and tradition will slowly disappear because of this problem. Therefore, designing a building and living environment for the coastal communities should not limit their activities and also needs to consider the possibility of the people to interact with their communities.

2. Fisheries and fishing activities

   The NCICD implementation will disrupt the fisheries and fishing activities because the sea wall plan will block direct access to the sea. The consultant proposes a ship lock to facilitate the passage from the port to fishing ground. The idea of creating ship lock is not without criticism. These following points need to be carefully observed in designing the ship lock.

- The work mechanism of the ship lock considering there are many fishermen's ship that will pass this lock. The planner and relevant stakeholders need to consider whether the ship lock is efficient for fishermen who go to fishing ground in daily basis.
- There is a concern that the fishermen are charged for passing the ship lock. The fishermen rely their life on fishing activities, hence it wil be burden for the fishermen to spend more money on accessing the fishing ground.

The plan also includes the relocation of fishing ports which are previously scattered and unorganized into a new location. In designing the new fishing port, the planner should choose a location which has a close proximity with the new fishermen village plan. Furthermore, the port should be equipped with other facilities, for example the processing and storage facilities unit for small and medium industry, fisheries farms, facilities for supporting fisheries activities, i.e. reparation workshop for fishermen's boat, other fishing equipment facilities, etc.

3. Distributive Justice

   The difference of living condition between coastal communities and new affluent actors might cause social friction. It should be realized that these contrasting groups would be living side by side in the new coastal development project. The technical solution may not able to mitigate the problem, therefore the SIA is needed to analyze further the impact to the communities and identify the strategies to mitigate this problem.

It is important to be noted that VSD can not solve all of the value conflicts and problems. Therefore, other problems, for example the possibility that the fishermen could lose their occupation should be studied in depth in order to be able to find the solution which will give the benefit for marginal communities. Hence apart from the problems which can be mitigated by using technical solution, SIA is recommended to be implemented to find the strategies which can compensate the adverse impacts of the project to the affected communities.

7.4 Safety, economic development vs port development (economic interest)

As the main port of Indonesia, Port of Jakarta, known as Tanjung Priok port, has an important role in driving the economy of Jakarta as 70% of national cargo gets transshipped in this port. The port has long been confronted with the increasing trend of traffic cargo, from 7 million TEU in 2013 to 18 million TEU in 2030. The port has reached its maximum capacity and hence the dwelling time is increasing over the years, which has detrimental effect to the business. This undesirable situation becomes the trigger for the government to expand the capacity of the port. In regard to NCICD plan, the development of giant sea wall would offer the protection of the port from flooding and land subsidence. On the other hand, closing off the bay would have an adverse effect on the development of Tanjung Priok Port due to the accessibility problem. Furthermore,

the sedimentation problem because of reclamation plan might interrupt the shipping activities. The consequence is that it might hamper the economic activities in Port of Jakarta. Thus, the NCICD plan will increase the conflict between safety and economic values.

To address this conflict between safety and economic values, an engineering design can be an alternative to mitigate the value conflict. A systematic approach that integrates values of stakeholders into engineering design is Values Sensitive Design (VSD). Hence this approach can be applied to trade-off the values of safety and economic through three stages of investigations:

a. Conceptual investigation

   The conceptual investigation is the first stage that needs to be conducted in VSD. This stage has the purpose to understand the effect of certain technology to the affected stakeholders. Therefore, the comprehensive stakeholder identification is critical to explore the values which stakeholders considered to be significant to specific engineering or technological design.

   In the context of port development and NCICD project, the values of these stakeholders that render to be important should be identified prior to the implementation of sea wall, i.e. Indonesian Port Corporation II (IPC II) as the operator, developer, and investor of seaport in 10 provinces of Indonesia including Jakarta and Ministry of Transportation which has the responsibility to govern and regulate transport sector in Indonesia, including sea transportation. In the beginning of this sub-chapter, it is explained that the economic value would be hampered because of the sea wall plan. However, there are other recognizable values which might be important to be considered in designing the sea wall. The following statement from the representative of Ministry of Transportation can be the basis of initial value which has been a matter of concern of this stakeholder.

   > '…… The islets will be built along the north coast. Meanwhile, there are number of seaports along the north coast, from Muara Angke, Sunda Kelapa, Tanjung Priok to Marunda. This requires a permit from the Transportation Ministry because this concerns the safety and security of seafaring."

   From the statement of the representative of Ministry of Transportation, safety and security values have become a matter of concern. This initial value should be discussed and investigated in the conceptual investigation where the values at stake would be clarified with the relevant stakeholders.

   Other value which can be initially identified is accessibility value. It is quite evident that the plan of sea wall construction would deter the shipping activities of Port of

Jakarta which means the economic activities would be negatively affected. Hence the accessibility problem would be the main concern that needs to be considered in designing the sea wall.

b. Empirical investigation

The empirical investigation is the stage where the opinions of relevant stakeholders should be brought into the tables. In this stage, the consultant of the project should gather the affected stakeholders to clarify the values at stake, identify the effect of particular technology to these stakeholders, and discuss the values which need to be considered in designing the particular technology.

In this case, as explained in the previous point, the main stakeholders who need to be involved are IPC II and Ministry of Transportation. One of the subjects which is crucial to be discussed is the plan of Port of Jakarta Development Project. The plan that has been drafted by the IPC II and Ministry of Transportation regarding Port of Jakarta Development needs to be synchronized with the NCICD Plan. Discussion should be conducted with these stakeholders by brainstorming or organizing a workshop. Through brainstorm and workshop, these methods can help the project consultant to identify the potential value conflicts which inflicted in the sea wall implementation. The initial values, for example the economic interest, accessibility, and safety & security should be discussed in more detail in the brainstorming or workshop session. Other value conflicts might be revealed during the discussion and these values can uncover the core problems triggered by the implementation of project.

From the business perspective, the relevant associations which might get adverse impact by the construction of sea wall are GPEI (Association of Indonesian Exporter) and GAFEKSI (Association of Indonesian Forwarder). The accessibility problem would affect their business, and subsequently their profit. Therefore, more elaborate analysis on the effect of sea wall construction to these stakeholders' values should be discussed in a workshop session.

The inclusion of the stakeholders in this stage is important to clarify the value conflicts at stake, explore the underlying issues of the project at hand, and discuss trade-off among varied values. The information gathered in this stage would be the key to incorporate stakeholders' values in designing technical aspects which would be discussed in the next stage of investigation.

c. Technical investigation

Technical investigation is the stage where relevant key values which have been identified in the empirical and conceptual investigations are incorporated into the design of particular technology, thus technical innovation which has more sufficient support for human values can be developed. Based on the empirical and the conceptual investigations, the identified values can be developed into the criteria as a basis for technical design.

In NCICD case, there are several initial values which can be the basis for developing criteria. For example, the economic interest and accessibility values are the values that can be the design criteria for solving the sea wall problem. These two values are closely related because the accessibility problem would give a negative effect on the economic factor of related stakeholders. In relation to the technical design, the accessibility here means that the sea wall design should not block the ship traffic into or out of the port. Therefore, the design of sea wall should be synchronized with the expansion plan of Jakarta Port. This investigation stage gives the possibility to develop an innovative design in which the design should accommodate the accessibility problem of ship traffic and should also give protection from flooding problem. In addition, safety and security values are mentioned by related stakeholder, hence the design might need to give guarantee of safety and security for the maritime transport.

Other values that haven't been discussed above might be uncover during the previous stages. Accordingly, those values need to be considered as the design criteria in the technical investigation stage for the sea wall construction. Apart from the relevant stakeholders, experts from varied fields need to be included in this investigation stage. The level of co-design with the brainstorming method among relevant stakeholders, experts, responsible authorities, and project consultant should be implemented in this stage to include the conceptual elements, decide the design criteria, and come up with the innovative design for NCICD plan.

7.5 Chapter conclusion

This chapter presents suggested approaches or the plan of conflict resolution to mitigate value conflicts for future improvements of the project. The NCICD plan has been used Cost-Benefit Analysis and Environmental Assessment as part of decision-making tools. However, there are still opposition towards the project. Previous chapters in this research pointed out that there are certain stakeholders who are overlooked in process and certain values are not covered in the current assessments. Furthermore, from the policy document, there are reports regarding the

implementation of public consultations with the main objective was to achieve common ground for the problems. In the evaluation part, there are important notes which are the drawbacks of the public consultation, including relatively low NGO representative and no high official figure attending the event. In the interview with the Dutch Consultant, he admitted that the consultation meeting is more like giving the information to the public rather than having a discussion regarding the project. In addition, there is no significant response from the participants regarding the project. From these experiences, these steps can be taken prior the implementation of suggested approaches:

1. Identify relevant stakeholders and their interests. The result of the stakeholder identification should be grouped based on the similar interests.
2. Decide which stakeholder groups should be represented in different stages of assessment process.
3. Identify the level of competencies of various stakeholder groups to avoid the occurrence of knowledge asymmetry among stakeholders that could become a potential barrier during participation process.
4. Prepare for the potential issues that are important for various groups of stakeholders.
5. Determine the level of stakeholder's involvement in different stages of the process and the media to achieve that level, e.g. FGD, workshop, small meeting, etc.
6. Determine the participation objective in various stages of the process and prepare the information needed from different groups of stakeholder.

After the stakeholder identification steps above, the suggested approaches in this chapter can be conducted.

This following table is the summary of the value conflicts and the approaches to minimize the value conflicts.

Table 10 - The summary of the value conflicts and the suggested approaches to minimize the value conflicts

	Value conflicts	Issues	Expert methods	Relevant stakeholders	Conflict Resolution Plan
1	Safety, economic development vs environmental protection	- Degradation of mangrove forests and coral reefs - Disruption to the existence of salt water aquaculture - Hydrodynamics impact	Environmental Impact Assessment (EIA) + Multi Criteria Analysis (MCA)	- Responsible authorities - Other relevant government regulators (Min. of Environment, Ministry of Maritime Affairs and Fisheries, Coordinating	1. Screening - Mailing (introducing the background of the project to the targeted stakeholders) - Briefings (Meeting with the affected communities) - Survey - Use of the media

		- Coastal morphological impact - Degradation of water quality - Disruption on the environmental infrastructure - The impact on the small island - The impact on land subsidence - Decline of potential maritime tourism		Ministry for Maritime Affairs) - Local Government (North Jakarta Administration) - NGO (Fishermen, Environmental) - Affected communities - Experts (Research Institution, Universities, Association)	2. Scoping and problem definition - Discussion (small group meeting Involving NGOs and representative of affected communities - Co-designing (working group) Involving responsible authorities, relevant regulators, and experts. 3. EIA study Public meeting, involving all stakeholder groups 4. Evaluation Public meeting, involving all stakeholder groups 5. Decision 6. Announcement - Mailing - Use of the media
2	Safety, economic development, cost recovery vs economic and welfare (general), utilities	1. Environmental - Sedimentation risk and abrasion - Decreasing water quality - Degradation of mangrove, coastal reed, and other marine habitats - Required sand material - The change of hydrodynamics pattern 2. Economic and welfare	Cost Benefit Analysis (CBA)	- Responsible authorities - Other relevant government regulators (Min. of Environment, Ministry of Maritime Affairs and Fisheries, Coordinating Ministry for Maritime Affairs, LIPI) - Local Government North Jakarta Administration) - Private developers	In CBA, the interactive process involving authorities (decision-makers, experts, and other relevant stakeholders who get affected by the project should be taken place in these following stages of CBA: 1. Formulation of Problem 2. Identification of project alternatives 3. Identification of project impacts Focus Group Discussion (FGD) could be a media for facilitating the participation of stakeholders in those three

		- Decline of maritime tourism potential - The resettlement of coastal communities - The benefit acquired from port activities and development - Access to coastal resources - Loss of occupation of the communities - The benefit of cost-recovery - Relocation of fish ports - The benefit of urban development 3. Utility The possibility that the existing infrastructure (telecommunication cable, power plant, LNG pipeline) may be disrupted 4. Security The benefit of freshwater storage (available water supply) 5. Identity The diminishing of cultural identity 6. Safety The benefit of coastal protection		- NGO (Fishermen, Environmental) - Affected communities - Experts (Research Institution, Universities, Association)	stages of CBA. The role of experts is important to facilitate the process, integrate, and negotiate local knowledge.

3	Safety, economic development vs economic and welfare (affected communities)	- The relocation of coastal communities from their home - Loss of occupation for the fishermen - The disruption on the access of fishing port affecting the fishermen and businessmen activities - The unjust distribution of cost and benefit between affected communities and new affluent actors.	Value Sensitive Design (VSD)+Social Impact Assessment (SIA)	- Responsible authorities - Other relevant government regulators (Ministry of Maritime Affairs and Fisheries, Coordinating Ministry for Maritime Affairs, LIPI) - Local Government (North Jakarta Administration) - NGO (Fishermen, Environmental) - Affected communities - Experts (Research Institution, Universities, Association)	Three stages of investigation in combination with SIA stages: 1. Conceptual investigation - Identify interested and affected stakeholders - Collect baseline data 2. Empirical investigation - Implement stakeholder participation Small group meeting with the NGOs, affected communities, and can be held to introduce the project and discuss the likely impact of the project and the relevant values which are important for them - Predict the possible impacts and the respond of the stakeholders List the possible impacts which may happen due to the implementation of the project 3. Technical investigation Involve responsible authorities, relevant Ministries, local government, and experts to jointly co-designing the suitable infrastructures based on the communities' values.
4	Safety, economic development vs port development	The disruption of shipping activities due to accessibility problem	Value Sensitive Design (VSD)	- Responsible authorities - Other relevant government	Three stages of investigation: 1. Conceptual investigation - Identify relevant stakeholders and their initial values

				regulators (Min. of Transportation) - Port Developer (IPC II) - Affected groups (GPEI, GAFEKSI) - Experts (Research Institution, Universities, Association)	2. Empirical investigation Conduct brainstorming or workshop with the Min. of Transportation, IPC II, GPEI, and GAFEKSI to clarify the values at stake, the effect of particular technology, and the values which need to be considered in designing the technology. 3. Technical investigation Based on the empirical and conceptual investigations, brainstorming method with the level of co-designing could be conducted involving experts, responsible authorities, and relevant stakeholders (Min. of Transportation and IPCII) to design an innovative idea for NCICD plan.

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Concluding Remarks

Based on research results in the previous chapters, this chapter presents the conclusions and recommendations of this research. Section 8.1 briefly describes the answers of main research question and sub-questions. Section 8.2 provides the recommendations for the problems in this specific case. In section 8.3, the author will present the personal reflection on conducting the research.

8.1 Conclusions

In the chapter 1.4, the main research question and sub-questions regarding stakeholder participation and the methods for addressing value conflicts with focus on ***the National Capital Integrated Coastal Development plan (NCICD)*** are introduced. Following these questions, several steps were taken to answer these research questions and have been thoroughly described in the chapter 2, 4, 5, 6, and 7. Based on those chapters, the conclusions will be briefly discussed in this following section.

Firstly, the literature review is conducted in chapter 2 to answer the first sub-research question related to existing expert methods for dealing with value conflicts and possible approaches for stakeholder participation. Based on the literature review, the methods for dealing with value conflicts can be divided into two categories, which are optimizing and non-optimizing approaches. The optimizing approach consists of several expert methods as follows: CBA and MCA, while the non-optimizing approach comprises of satisficing and VSD method. For the possible approaches for stakeholder participations, the author uses two literature as a guidance in this research, which are International Association for Public Participation (2007) and (Mostert, 2003). Based on the literature, the degree participation corresponding to the increasing level of

public impact as follows: inform, consult, involvement/ discussion, co-designing, collaborate/ co-decision making, empower/ decision-making.

Secondly, to answer the second research question, the stakeholder analysis is used to identify the stakeholders who can affect and are affected by the project. This initial step is found to be crucial to further elicit the values which render to be important for the stakeholders. The stakeholders are categorized into several groups based on the role and position in the decision-making process. The stakeholders are categorized into eight groups (responsible authorities, other government regulators, affected communities, NGO, port authorities, private developers, relevant private/ state owned companies, and expert/ consultant/ academia).

Following the stakeholder identification, the stakeholders' values are identified by emphasizing on the importance of public debate. Hence, available documents which comprise argument from relevant stakeholders are used to identify important values for the stakeholders. The arguments were primarily referred based on the statements that were reported in the media mass. The media mass which are used for the analysis is based on 243 national newspaper articles which are retrieved using the keywords of "giant sea wall" and "NCICD". The purpose of using public debate to identify stakeholders' values is to understand the underlying reasons of persistent oppositions. From this process, it is found that nine values were revealed by the relevant stakeholders concerning the implementation of NCICD plan. The values are accessibility, distributive justice, economic and welfare (positive and negative), utilities, safety (positive and negative), procedural justice, identity, environment (positive and negative), and water security. It can be seen that economic and welfare, safety, and environment have two sides of values which are positive and negative due to different perception held by the stakeholders. For example, the responsible authorities have the objective to restore the environmental condition across the coastal area through the implementation of NCICD project. It means that they believe the project will give a positive environmental value. While other stakeholder groups, e.g. environmental NGO, several experts, believe that the project will only cause negative consequences to the environment.

Thirdly, to answer the sub-question on the process of decision-making of NCICD project and the interaction between stakeholders; the actors, arena, and the interaction among actors were analyzed in depth by using round model. This research identifies three rounds during the decision-making process. **The first round is the initiation of future coastal defence in North Jakarta (2009 – 2011)**. In this round, the actors who mainly involved in the arena are the Government of Indonesia (GOI) and the Government of the Netherlands (GON) because the study for initial future coastal defence in North Jakarta was executed under bilateral cooperation framework between GOI and GON. The second actors who actively involved in this round are

the Indonesian and Dutch experts who shared the knowledge concerning the development of coastal defence plan. **The second round is the formulation of coastal defence master plan (2012 – 2014)**. This round is the follow up of JCDS project which was formulated in the previous round. In this round, the responsible authorities were supported by the Dutch consortium and Indonesian experts in working on more elaborate master plan which are known as National Capital Integrated Coastal Development Plan (NCICD). Although more stakeholders were involved in this round; the responsible authorities, Dutch consortium, and the experts were the key stakeholders in this round. As the plan were slowly known to the public, the disapproval regarding the project is more evident in this stage proving that the stakeholder participation meetings were not successful in achieving the common ground of the problem analysis. **The last round is the decision of central government to review the plan (2015 – now)**. In this round the central government decided to re-assess the NCICD plan considering there are wave of disapprovals from different groups of stakeholders. It is interesting to be noted that the shifted of the authorities would largely affect the decision taken by the government. In this round, new actor, Coordinating Ministry of Maritime and Fisheries Affairs has the main power to decide the direction of the plan. However, the public trust towards the project is decreasing even further due to the continuity of reclamation project by Jakarta Administration.

Following the analysis of decision-making process in each round, the characteristics of networks can be concluded to find better strategies for the project implementation plan. First, **interdependency of actors** means that the actors are mutually dependent to achieve their own objectives. In this case, the responsible authorities are dependent on other actors' resources. For example, the project is known to have a huge adverse impact on the environment. Therefore, the inclusion of relevant authorities, in this case, Ministry of Environment is important due to the Ministry authority to issue and cancel environmental permit regarding the project. Second, **selective activation network,** through several rounds, only the experts were mainly involved in the process. Ideally, the authorities need to involve stakeholders with production, blocking, and diffuse power. In the process of NCICD plan, the stakeholders who hold the blocking power were overlooked which make the stakeholders would deliver any attempts to block the decision-making process. Third, **the need for negotiated knowledge.** The NCICD plan needs to be supported by multi-sectoral knowledge from actors with varied expertise. The negotiated knowledge with the involvement of experts who oppose and support the project needs to be conducted to prevent the knowledge conflict and lessen the contested data and information regarding the project. Last, **the relevancy of problem formulation to other actors**. The main reason why there are many rejections from the stakeholders concerning NCICD plan is that the problem formulation which is introduced by the responsible authorities is not attractive to other stakeholders.

Fourthly, the main values offered by NCICD plan according to the responsible authorities are safety and economic development. The main goal of NCICD project is the value of safety which is to protect the city against flooding from high tides. In addition, the project also has the purpose to offer the opportunities for the coastal zone development which represents the value of economic development. From the public debate which mainly found in the media mass, there are several conflicting values between values offered by the NCICD plan and values which are considered to be important by other stakeholders. There are six conflicting values which has been analyzed in the NCICD project, i.e. **safety, economic development vs environmental protection (i)**; **safety, economic development vs economic and welfare (affected communities) (ii); safety, economic development vs port development (economic interest) (iii); safety, economic development vs identity/culture (iv); safety, economic development vs utilities (v).**

Lastly, following the results of value conflict analysis in the previous sub-questions, suggested approaches are presented in this research to mitigate those value conflicts. Cost-Benefit Analysis and Environmental Impact Assessment were conducted as part of decision making tools in NCICD project. Even though these assessments have been organized, there are still controversies and oppositions toward the project. From the previous literature and analysis in this research, it has been observed that there are certain stakeholders who are necessary to be involved but are still underrepresented in the plan. Furthermore, the values which are fundamental to certain stakeholders have not been covered in the previous assessments. Therefore, in this research, the values of stakeholders are adopted as the basis of using expert methods in decision-making process in combination with the stakeholder participation method. This following list is the summary of the value conflicts and the suggested approaches to minimize value conflicts for the future improvements.

	Value conflicts	Issues	Expert methods	Relevant stakeholders	Conflict Resolution Plan
1	Safety, economic development vs environmental protection	- Degradation of mangrove forests and coral reefs - Disruption to the existence of salt water aquaculture - Hydrodynamics impact - Coastal morphological impact	Environmental Impact Assessment (EIA) + Multi Criteria Analysis (MCA)	- Responsible authorities - Other relevant government regulators (Min. of Environment, Ministry of Maritime Affairs and Fisheries, Coordinating	1. Screening - Mailing (introducing the background of the project to the targeted stakeholders) - Briefings (Meeting with the affected communities) - Survey - Use of the media

		- Degradation of water quality - Disruption on the environmental infrastructure - The impact on the small island - The impact on land subsidence - Decline of potential maritime tourism		Ministry for Maritime Affairs) - Local Government (North Jakarta Administration) - NGO (Fishermen, Environmental) - Affected communities - Experts (Research Institution, Universities, Association)	2. Scoping and problem definition - Discussion (small group meeting Involving NGOs and representative of affected communities - Co-designing (working group) Involving responsible authorities, relevant regulators, and experts. 3. EIA study Public meeting, involving all stakeholder groups 4. Evaluation Public meeting, involving all stakeholder groups 5. Decision 6. Announcement - Mailing - Use of the media
2	Safety, economic development, cost recovery vs economic and welfare (general), utilities	1. Environmental - Sedimentation risk and abrasion - Decreasing water quality - Degradation of mangrove, coastal reed, and other marine habitats - Required sand material - The change of hydrodynamics pattern 2. Economic and welfare	Cost Benefit Analysis (CBA)	- Responsible authorities - Other relevant government regulators (Min. of Environment, Ministry of Maritime Affairs and Fisheries, Coordinating Ministry for Maritime Affairs, LIPI) - Local Government North Jakarta Administration) - Private developers	In CBA, the interactive process involving authorities (decision-makers, experts, and other relevant stakeholders who get affected by the project should be taken place in these following stages of CBA: 1. Formulation of Problem 2. Identification of project alternatives 3. Identification of project impacts Focus Group Discussion (FGD) could be a media for facilitating the participation of stakeholders in those three

		- Decline of maritime tourism potential - The resettlement of coastal communities - The benefit acquired from port activities and development - Access to coastal resources - Loss of occupation of the communities - The benefit of cost-recovery - Relocation of fish ports - The benefit of urban development 3. Utility The possibility that the existing infrastructure (telecommunication cable, power plant, LNG pipeline) may be disrupted 4. Security The benefit of freshwater storage (available water supply) 5. Identity The diminishing of cultural identity 6. Safety The benefit of coastal protection		- NGO (Fishermen, Environmental) - Affected communities - Experts (Research Institution, Universities, Association)	stages of CBA. The role of experts is important to facilitate the process, integrate, and negotiate local knowledge.

3	Safety, economic development vs economic and welfare (affected communities)	- The relocation of coastal communities from their home - Loss of occupation for the fishermen - The disruption on the access of fishing port affecting the fishermen and businessmen activities - The unjust distribution of cost and benefit between affected communities and new affluent actors.	Value Sensitive Design (VSD)+Social Impact Assessment (SIA)	- Responsible authorities - Other relevant government regulators (Ministry of Maritime Affairs and Fisheries, Coordinating Ministry for Maritime Affairs, LIPI) - Local Government (North Jakarta Administration) - NGO (Fishermen, Environmental) - Affected communities - Experts (Research Institution, Universities, Association)	Three stages of investigation in combination with SIA stages: 1. Conceptual investigation - Identify interested and affected stakeholders - Collect baseline data 2. Empirical investigation - Implement stakeholder participation Small group meeting with the NGOs, affected communities, and can be held to introduce the project and discuss the likely impact of the project and the relevant values which are important for them - Predict the possible impacts and the respond of the stakeholders List the possible impacts which may happen due to the implementation of the project 3. Technical investigation Involve responsible authorities, relevant Ministries, local government, and experts to jointly co-designing the suitable infrastructures based on the communities' values.
4	Safety, economic development vs port development	The disruption of shipping activities due to accessibility problem	Value Sensitive Design (VSD)	- Responsible authorities - Other relevant government	Three stages of investigation: 1. Conceptual investigation - Identify relevant stakeholders and their initial values

				regulators (Min. of Transportation) - Port Developer (IPC II) - Affected groups (GPEI, GAFEKSI) - Experts (Research Institution, Universities, Association)	2. Empirical investigation Conduct brainstorming or workshop with the Min. of Transportation, IPC II, GPEI, and GAFEKSI to clarify the values at stake, the effect of particular technology, and the values which need to be considered in designing the technology. 3. Technical investigation Based on the empirical and conceptual investigations, brainstorming method with the level of co-designing could be conducted involving experts, responsible authorities, and relevant stakeholders (Min. of Transportation and IPCII) to design an innovative idea for NCICD plan.

- **EIA in combination with MCA as the method to mitigate the value conflict of Safety, Economic development vs environmental protection**

The environmental problem is the issue that must be seriously taken into consideration in large infrastructure project. From the analysis of decision-making process, it is clear that since the initiation of NCICD project, the environmental problem is the issue that frequently used to oppose the project. Several stakeholders, for example the environmental NGOs, has positioned themselves as the opponent of the project. They also pointed out that the decision-making process of the project has violated the public information transparency. During the second phase of the project, the project got a lot of criticism, including from the Ministry of Environment. In addition, there are also studies from several research institutions that show the huge effect of NCICD project on the environment. From these issues, there are two important elements which need to be considered by the responsible authorities. First, a transparent environmental

assessment needs to be conducted. Second, in order to have a transparent assessment, relevant stakeholders should be included.

Those two elements have actually been covered in Ministry of Environment Regulation on Guidelines of Public Participation in EIA process. As regulated by the Government of Indonesia, public participation which involves three important stakeholders, i.e. affected communities, environmental interest groups, and people who got affected by any decision taken is a mandatory part of EIA implementation. Without the involvement of stakeholders, the opponent of the project would continously press the issue of environmental problem to the public. However, an EIA needs a formalized steps to include the participation of stakeholders in the EIA stages. Therefore, MCA is selected as a supported decision tool and also can be a method to help structuring the stakeholder participation process.

There are several stages in EIA incorporated with MCA method which are suggested to include relevant stakeholders.

1. Before the scoping stage, the stakeholders should be informed regarding the project by using varied media, for example mailing, survey, and media mass. This is in line with basic principle of public participation in EIA process which is to provide complete and transparent information. Meanwhile, the stakeholders who have less knowledge than others should be briefed before the next consultation meeting in order to ensure that they can participate effectively in the meeting. Furthermore, the briefing is also conducted to guarantee the equality with other stakeholders in the participation process.
2. Secondly, in the scoping and problem stage, the participation objectives should be defined first. In this stage, the purposes of participation process are to identify decision-making objectives, impacts of the project, a complete set of alternatives, and criteria. The involvement of stakeholders can be divided into two groups. The first group consists of decision-makers and regulators who have the power to affect the decision of the project and experts in different area. The level of involvement of this group is co-designing, which means the stakeholders take an active part in developing policy or designing project. The second group consists of the interests group and affected communities. The level of involvement of this group is discussion to ensure that the concerns and opinions of stakeholders are considered.
3. In EIA study stage, MCA method can be used to structure the stakeholders' preferences. In this stage, the stakeholders are gathered through public meeting which has the objective to determine the weight of each criteria according to the value judgement of stakeholder groups. After that, the alternatives can be ranked based on the weight given.
4. The next stage is the evaluation stage. The participation in this stage has the objective to review the quality of EIA study through public meeting involving relevant stakeholders.

5. The last stage is announcement. The level of involvement in this stage is inform. It means that the stakeholders should get the access to information regarding the EIA result.

- **CBA as a method to mitigate Safety, Economic development, Cost-recovery vs Economic and Welfare (general) vs Utilities**

In the development of large infrastructure project where the government needs to spend huge amount of money, CBA becomes an important tool to assign the priority to different scenarios. Although there are controversies of using CBA as the assessment method, CBA is still generally used as the supporting decision-making tools for large infrastructure project because of its capability to give judgement about the distribution of costs and benefits among varied stakeholders. Moreover, CBA does not only consider the economic aspect of the project, but also gives attention to the social return of the project.

The involvement of stakeholders has become an important part in the implementation of CBA. The positive result of CBA does not mean that the acceptability of the project will be higher. The project might still face the opposition if the stakeholders considers that their values and interests have not taken into account. It is also essential to have agreement on the problem formulation among stakeholders which should be discussed in the early stage of CBA. Therefore, the inclusion of stakeholders and experts is important in different stages of CBA process as follows.

	CBA Procedure	**Involvement**
1	Problem analysis	**Stakeholders, experts**
2	Identification of project alternatives	**Stakeholders, experts**
3	Identification of project impacts	**Stakeholders, experts**
4	Calculation of benefits and costs of project	**Experts**
5	Sensitivity analysis	**Experts**

- **VSD in combination with SIA as the method to mitigate value conflict between Safety, Economic development vs Economic and welfare (affected communities), Culture/ Identity**

VSD is intended to address the problem of value conflicts through engineering design by incorporating the ethical values into the design. In this case, the development of infrastructure

project should be adapted by considering the value of economic & welfare of the affected communities and their culture/ identity. Because the construction of the infrastructure project would give the largest effect to the communities, therefore the involvement of the affected stakeholders in different stages of VSD implementation should be the central of the process. The incorporation of VSD and SIA is suggested for this kind of conflict because the identification of social impacts is important in this type of conflict. Furthermore, the implementation of SIA can help to formalize the procedure of involving relevant stakeholders.

There are three stages of investigations in VSD. The following explanation is the implementation stages of VSD incorporated with SIA.

1. Conceptual investigations
    - Identifying interested and affected stakeholders
    - Collecting baseline data
        - Initial information to gather more viewpoints from the interested and affected stakeholders
2. Empirical investigations
    - Assisting the implementation of stakeholder participation
    - Prediction the possible impacts and the respond of the stakeholders
3. Technical investigations
    - The stage where the technology is designed by incorporating key values of relevant stakeholders
    - This step is recommended to involve relevant Ministries, research institutions, universities, experts to jointly co-designing the possible infrastructure based on the communities' values.

- **VSD as a method to mitigate value conflicts between Safety, Economic development vs Port Development (Economic interest)**

Port development has given a significant contribution to the economic activity of the country. Therefore, the development of any large infrastructure project should be adapted to prevent any disturbance to the port activity which can affect the economic activity of the country. To mitigate the conflict, a VSD method is proposed through three stages of investigations:

1. Conceptual investigations
    - The identification of stakeholders and their values
2. Empirical Investigations
    - Gather the key stakeholders who have been identified in the previous stage with the following purposes:

    - Clarifying values at stake of the involved stakeholders
    - Exploring the underlying issues of the project
    - Identifying the effects of particular technology
    - Identifying the values which are important to be considered in designing particular technology
    - Discussing trade-off among varied values
  - The information in this stage would be the key to incorporate stakeholder values in technical investigation
3. Technical investigations
  - The identified values in the previous stage can be developed into criteria as a basis of technical design
  - The relevant stakeholders and experts from varied fields need to be included in this investigation stage. The level of co-design with the brainstorming method among relevant stakeholders, experts, responsible authorities, and project consultant should be implemented in this stage to include the conceptual elements, decide the design criteria, and come up with the innovative design.

To sum up, participation of stakeholder in a project plan is a great of importance to lessen the disapprovals from public. From the analysis of actors, arena, and interactions among stakeholders in the decision-making process, it is evident that the stakeholders who has blocking power in the project were not involved since the beginning of the project, hence gaining their trust becomes a difficult process. Furthermore, it is found that there are many studies from the government research institutions and academia which discuss about the impacts of NCICD project implementation, thus it is crucial to actively involve the experts in the decision-making process to negotiate data and information concerning NCICD project. From the identification of procedural justice value during the decision-making process, there are four criteria of stakeholder participation and principle of procedural justice, i.e. transparency, trust, involvement, and informed consent, which become the concern of various stakeholders. From this finding, it is understandable that varied stakeholders show their disapprovals against the project. It can also be concluded that certain stakeholders are overlooked in the plan. Hence, to gain the acceptance of the project under current situation is hard to achieve. Furthermore, the stakeholders would be more satisfied if their opinion could have influence on the outcome of decision-making process. Therefore, in this research, the values of different stakeholders are used as a starting point to mitigate the controversies surrounding NCICD project. As an initial approach, the public debate regarding the project were retrieved from the media mass and analyzed to find the values and the conflicts among them. The values which were retrieved from the media mass are sufficient as the initial data to find the problems which become the concern of various stakeholders. After the

finding of value conflicts, the expert methods to mitigate these conflicts are introduced with the incorporation of stakeholder participation methods in which the right stakeholders are targeted to be involved in the expert method process. This process is expected to tackle the procedural justice issue which in part the reason of many rejections encountered by the project. The suggested approaches are also hoped to improve the current assessment that has been implemented.

8.2 Recommendations

Based on the previous observation, several recommendations are drawn to enhance the acceptability of the project.

- The responsible authorities should not only focus on the technical aspect of the project. The social acceptance of the project is a crucial part to enhance the acceptability of the project by involving the powerful representatives of the affected communities in the early stage of the project. This involvement can assist the authorities to understand local knowledge and unpredicted issues which become the concern of communities, hence this can help the government to give appropriate compensations.
- Approaching the affected communities can be done by framing a broader problem formulation. The safety and economic development goals which are the objectives of the project are not the main concern of the communities. Thus, the authorities need to set a broader problem formulation when approaching the communities. It is advisable to carry out goal stretching and couple the solution to the communities' problems. The authorities can explain the benefits of the project to the communities, for example the project will improve their living condition, create new opportunities or occupations for the communities, and generally enhance the economic growth in the area.
- The responsible authorities should take into consideration the stakeholders with blocking power. It is better to identify the stakeholders with blocking power in the early stage of the project. Failure in involving them in the decision-making process would make them to disrupt the course of decision-making process. For example, in NCICD case, the NGOs who have interest in this project were left out since the beginning of the project. These groups would make any attempts to block the decision-making process, including giving statements in the media mass which will affect the perception of the public to this project and also taking legal action to halt the project.
- Participatory decision-making process should be implemented in deciding the implementation of a large infrastructure project in Indonesia. The authorities should realize that they cannot determine the nation developments alone, but a decision should be taken by involving multiple actors. The actors are basically mutually dependent; thus, a decision

should be shaped through the interaction of stakeholders with different perspectives and resources.

8.3 Reflection

In this section, a personal reflection on conducting the research will be presented.

This research was started with the information about the controversies and the persistent opposition surrounding the NCICD plan which introduced as the ultimate solution to prevent flooding threat from the North Jakarta sea. Previous literature mentioned that the authorities need to tackle the public concern and conduct more effort to engage the public. In addition, past experiences of flood mitigation plan in Indonesia took quite a long time to finally reach the policy implementation. Besides other aspects, for example political aspect, the problem emerges partly because of public opposition and lack of stakeholder involvement. Public oppose a project because their values are often overlooked. Therefore, this research tries to provide alternative approaches for the authorities to deal with different stakeholders' perspectives and values. The theoretical contribution of this research, firstly, the suggested approaches combines the expert methods in dealing with conflicting values with the stakeholder analysis and participation which are still lacking in the current literature. Secondly, the author gives suggestion on which specific expert method should be used for specific type of value conflict with regard to the NCICD project, while in general one expert method is used to tackle varied conflicting values.

However, the suggested approaches in this research have many limitations including the limitation of methodological approaches, the perspectives employed in the research, and application of suggested approaches in this research.

Firstly, the methodological approach used in this research. The main data source of this research is statements and information from the newspapers. The amount of data collected from the newspapers can be overwhelming. A close attention to the data from the newspapers is necessary to get full information needed for the research. The probability of losing the important statements or duplicating the statements from the newspapers is quite high due to large amount of data. Moreover, since the author uses the data from the newspapers to identify the value of stakeholders, there are certain important stakeholders which are not sufficiently represented in the newspapers, for example the affected communities. There is limited information related to the opinions or statements from the affected communities. Mostly the statements of the affected communities are represented by NGOs. Hence it is difficult to get the accurate data of the perception and also fundamental values held by the affected communities. In addition, the fundamental values held by the stakeholders are based on the assumption made by the author. Although the author made the assumption based on the existing literature, it is better to validate the assumptions and mitigate the biases by using several expert judgements.

Secondly, the limited perspectives employed in this research. In this research the author suggests technical approaches with the application of stakeholders' fundamental values as the starting point of using the approaches and the incorporation of stakeholder participation to address large infrastructure project problem and furthermore to gain broad stakeholder acceptance. The inclusion of values and the stakeholder participation might improve the process, but these aspects cannot guarantee that the implementation of expert method will be successful to fully mitigate all the value conflicts and thus the controversies might remain. Other perspectives in decision-making literature might be helpful to see the limitations of this research. Noting that NCICD project is very complex in nature, the author realizes that other perspectives in the literature of policy-making might affect the course of decision-making process of the project, for example, the theory of wicked problem. Wicked problem has definition of a problem with high levels of complexity, uncertainty, and value divergence which can be applied to the complexity of NCICD project. From the perspective of wicked problem, the engineering approach and technical expertise cannot tackle complex problems due to the possibility of failing to notice the varied perspectives and values of stakeholders who affect and get affected by the policy. Hence, according to Head (2008) the process of solution-seeking should go through a deliberation process in which the values and perspectives of the stakeholders are considered in defining the problems and this process is utterly different from the expert-based solutions. Furthermore, as explained before, one of the characteristics of wicked problem is uncertainty. Thus, there is no fix solutions to address the wicked problem and there should be adjustments and changes in a long-term policy. In the current research, the author believes that the value of varied of stakeholders should be included in the project assessment which is in line with solution seeking process of the wicked problem, however, this research does not cover the possibility of policy change or adjustments to address the uncertainty of problem in long term policy. With regard to the NCICD plan, one of the interviewee mentioned that the most important criteria to decide the implementation of stage B and C of the plan is the land subsidence. The interviewee furthermore stated that if the land subsidence stops in 10 years, there is a possibility that the sea wall (stage B) is not needed anymore. From the statements, we could see that different possibilities might happen in the future; thus, adjustments or policy changes is necessary. Therefore, a research to address the uncertainty of the project in a long term is interesting to be conducted for future research.

Another perspectives that need to be considered, but not included in this research are politics and power in decision-making process. Head (2008) in his article stated that the politicians frequently proposes their preferred solutions despite the disagreement on key issues with the other stakeholders. The NCICD project was introduced by devising the problem of sinking city as results of land subsidence and flooding threat into the public. Accordingly, the political actors presented the sea wall and land reclamation as the proposed solution to address the sinking

problem and flooding problems from the North Jakarta sea. There are several important political actions were noticed during the decision-making process of NCICD plan. In 2016, this project gained the center of attention from the public because of the bribery case involving Jakarta City Council member and private developers. Following this case, the then Coordinating Maritime Affairs Minister, Rizal Ramli, took the decision to halt the reclamation project in North Jakarta. Furthermore, the President of Indonesia held a meeting with the relevant authorities and few important points were produced, including drafting a more comprehensive NCICD plan to ensure that the master plan would address environmental, social, and legal problems, forming a joint committee with members from different ministries, and integrating land reclamation project with the NCICD plan. The team found the land reclamation (islet G) endangers the environment, disrupts the submarine power cables, and disturbs the ship traffic, thus stopping the reclamation project is recommended by the team. This recommendation was refused by the Jakarta Administration and a letter was sent to the president explaining that the reclamation has been properly conducted. After that, a new Coordinating Maritime Affairs Minister was appointed and the decision to give permission to continue reclamation project was taken. In addition, the decision to focus on stage A of the NCICD plan which is to strengthen the existing wall was taken, while the decision on stage B and C was postponed. From the summary of the important events of NCICD decision-making process, it is noticeable that politics is still the influential aspects which affect the important decision taken by the government. While there are public discourses around the NCICD plan due to the negative effects of off shore sea wall and land reclamation construction plan, but these reasons are not sufficient to change the policy taken by the government. However, a political scandal, in this case bribery case, had a quite impactful effect to the plan. Therefore, the suggested value inclusion and participatory method to improve the existing expert methods would have limitation in the application. These suggested approaches might be helpful to minimize value conflicts and enhance the acceptability of the project, but other aspects, for example politics and power, need to be considered due to their influences on the policy taken by the government.

Lastly, the limitation of using the suggested approaches in this research. In regard to the suggested approaches and participation plan, the author formulized the suggested approaches according to Indonesian practice, however in this research, the step by step research approach for handling value conflicts can also be applied in other cases. This research gives a particular method to approach the infrastructure projects. It is useful to look values of the stakeholders, value conflicts which are arisen due to a project plan, and also finding a particular method to address value conflicts; thus, other projects could be assessed in similar way. Although the values would change, the value conflicts would be different, and another choice of methods would be chosen, other projects could still be assessed with the research approach introduced in this research.

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APPENDIX

A. List of values

	Value	Definition	Source
Water Management	**Safety**	Against flooding	(Ravesteijn & Kroesen, 2015)
	Security	Food and drinking water	
	Utility	Cooling, industrial water, waste, shipping, land acclamation, energy	
	Sustainability	Ensuring quantity and quality	
	Distributive justice	Equal access to common goods	
	Social sustainability	Addressing the needs of the poor and fighting inequalities inthe world	
	Democratic participation		
Information System	**Human Welfare**	• Physical welfare The well-being of individual's biological selves, which is harmed by injury, sickness, and death • Material welfare Physical object that human values and human economic interests • Psychological welfare Higher order of emotional states of human beings, including comfort, peace, and mental health	(Friedman & Kahn Jr, 2002; Friedman et al., 2013)
	Ownership and property	Ownership can be understood as general rights of property, which in turn, entails ofagroup of specific rights,	

		including the right to possess an object, use it, manage it, derive income from it, and bequeath it.	
	Trust	The belief and confidence in the integrity, reliability, and fairness of a person or organization	
	Informed consent	Permission granted in full knowledge of the possible consequences	
	Accountability	Refers to the properties that ensure that the actions of a person, people, or institution may be traced uniquely to the person, people, or institution	
	Identity	Refers to people's understanding of who they are over time, embracing both continuity and discontinuity over time	
	Environment sustainability	Meeting the needs of the present generation without compromising the ability of future generations to meet their own needs (Brundtland)	
Nuclear Technology	**Environmental friendliness**	Preserving the status of nature leaving it no worse than we found it	(Taebi & Kadak, 2010; Taebi & Kloosterman, 2015)
	Safety	Protecting people from the accidental and *unintentional* harmful effects of ionizing radiation	
	Security	Protecting people from the *intentional* harmful effects of ionizing radiation arising from sabotage or proliferation	
	Resource durability	The availability of natural resources for the future or the providing of an equivalent alternative for the same function	
	Economic viability	Embarking on a new technology at a certain stage and ensuring its continuation over the course of time	
	Technological applicability	The scientific feasibility of a certain technology as well as its industrial availability	

	Intergenerational justice	What we leave behind for future generation	
Shale Gas	**International stability**	National and international stability in relation to energy supply, includingconcerns about import dependence, geopolitical tensions due to changes inenergy reserves, and concerns of energy exporting countries regarding demand insecurity	(Dignum et al., 2015)
	Resource durability	Availability of resources for future generations. This may include theconservation of existing finite resources as well as the development of alternative resources to compensate for depleted resources	
	Environmental friendliness	"Preserving the status of nature leaving it no worse than we found it" (Taebi and Kadak2010, p. 1347). This value is presented here in the non-anthropocentricmode, which assigns an inherent value to the environment	
	Aesthetics	The intrinsic value of the beauty of nature. Changes in the landscape can impact the experienced beauty of the landscape	
	Health and safety	"[A] state of complete physical, mental and social well-being and not merely theabsence of disease or infirmity" (WHO 1948). An argument relates to the valueof health when it compromises, or refers to, the state of well-being as defined bythe World Health Organization or when it inhibits people from reaching thisstate	

	Welfare	Affordability and economic viability of the decision (not) to pursue shale gas exploration and exploitation	
	Accountability	"[S]ound political and legal basis with a corresponding institutional framework" (Flüler and Blowers 2007, p. 17)	
	Distributive justice	The fair distribution of costs, benefits, and other positive and negative external effects,including both spatial and temporal distributive justice. The spatial part refers todistribution of negative and positive consequences in a physical spatial sense. Thetemporal aspect includes intergenerational issues and includes exploitation ofresources for future generations, as well as the environment we leave behind	
	Procedural justice	Transparency, honesty as well as timely, full, and unbiased information in the procedure of planning, exploratory drilling, and exploitation (adapted from Hall et al.2013)	
Wind Farms	**Trust**	Ensure honesty and transparency during the engagement activities	(Hall et al., 2013)
	Distributional justice and the provision of benefits	Expectations for justice regarding how costs and benefits are shared	
	Procedural justice	Honesty and transparency, full and unbiased information	
	Place of attachment	The impact of visual changes to a place or landscape can significantly influence the acceptance towards certain technology or project	

B. Stakeholder Interactions during decision-making process

Date	Interaction	Stakeholder
2009 – 2012	Between 2009 and 2012 the blueprint for preventing coastal flood was developed in **the Jakarta Coastal Defense Strategy project (JCDS)**. The key approach would be that 3 lines of 'sea defenses' would be created over a period of 20-30 years.	Dutch Ministry of Infrastructure and the Environment, Consultant (Consortium of Deltares and Urban Solutions, in association with Witteveen + Bos, Triple-A Team, MLD, Pusair, ITB), National Government (Ministry of Public Works, National Development Agency (Bappenas), Coordinating Ministry of Economic Affairs, Ministry of Marine Affairs and Fisheries, Ministry of Environment), Jakarta Government
August 2012	Koalisi Pulihkan Jakarta (Restore Jakarta Coalition), a coalition of NGOs that focuses on areas of environmental protection and human rights **filed a judicial review** against Jakarta city bylaw that regulate spatial planning of the city for the next two decades. The bylaw that includes large infrastructure project, for example giant sea wall, was considered violating higher regulations, including laws on the environment, spatial planning and public information transparency.	KoalisiPulihkan Jakarta (Restore Jakarta Coalition), Jakarta Government
November 2012	**Formal meeting between Governor of Jakarta and Minister of Public Works** was held. Seven important agreements were established, including the construction of giant sea wall in the North Jakarta coastal area.	Governor of Jakarta (JokoWidodo), Minister of Public Works (DjokoKirmanto)

2012 – 2014	The JCDS project was followed up by the **National Capital Integrated Coastal Development program (NCICD)**, taking the offshore solution as a starting point. The name of the NCICD program reflects two developments. Firstly, the understanding that this is a project of national importance which also stretches beyond the city limits of Jakarta: measures in adjacent and upstream areas are also part of the strategy. Secondly, the insight that a project of such magnitude will have significant positive and negative impacts on the coastal zone, which creates the need for an integrated development rather than a civil engineering approach.	Responsible Authorities, Consultant
26 November 2013	**First Public Consultation Meeting** was held in University of Indonesia (UI). Its main objective was to achieve common ground for the problem analysis. Relatively low NGO representatives attended the meeting.	Representatives of related ministries, local governments, research institutes, Dutch consultant, academia, media, NGO, students
12 December 2013	**Second Public Consultation Meeting** was held in Tangerang. Its main objective was to achieve common ground for the problem analysis. The number of local government official attending was less than expected.	Representatives of related ministries, local governments, research institutes, Dutch consultant, academia, media, NGO, students
20 December 2013	**Third Public Consultation Meeting** was held in Bekasi. Its main objective was to achieve common ground for the problem analysis. No high official figure from local government, media and NGO attended the meeting.	Representatives of related ministries, local governments, research institutes, Dutch consultant, academia, media, NGO, students
9 October 2014	**The groundbreaking event of NCICD's first phase** was commenced by the central government.	Coordinating Economic Minister Chairul Tanjung led the ceremony, with top officials, including Environment Minister Balthasa rKambuaya, Research and Technology Minister Gusti Muhammad Hatta, National Development Planning Minister Armida Alisjahbana, Maritime Affairs and Fisheries Minister Sharif Cicip Sutardjo, Public Works Deputy

		Minister Achmad Hermanto Dardak and Jakarta deputy governor for spatial planning Sarwo Handayani. Dutch Ambassador to Indonesia Tjeerd de Zwaan, as well as representatives of developer companies, also attended the ceremony.
9 October 2014	**Former Jakarta Governor Joko "Jokowi" Widodo met with South Korean Foreign Minister Yun Byung-se to ask for South Korea's assistance** in constructing the giant sea wall as part of the the NCICD project. Jokowi wants the giant sea wall, located in North Jakarta, to have a quality equals to the Saemangeum construction in South Korea.	Former Jakarta Governor (Joko Widodo), South Korean Foreign Minister (Yun Byung-se)
15 October 2014	**The opposition from the People's Coalition for Fisheries Justice Indonesia (KIARA) and the Indonesian Traditional Fishermen's Association (KNTI)** against sea wall project was proclaimed in a joint statement. The key message of the joint statement is that the project would not be effective in preventing the flood and water problem in Jakarta. Furthermore, this project would negatively affect the livelihood of the coastal communities.	The People's Coalition for Fisheries Justice Indonesia (KIARA), the Indonesian Traditional Fishermen's Association (KNTI)
18 October 2014	**The People's Coalition for Fisheries Justice Indonesia (KIARA) held protest action** in Bundaran Hotel Indonesia against the construction of Giant Sea Wall.	The People's Coalition for Fisheries Justice Indonesia (KIARA)
November - December 2014	**Central Government decided to do re-assessment of the NCICD project**, particularly the environmental impact part of the project.	Related ministries
February 2015	**The authorities conducted a tender for the type A** construction of Jakarta's Giant Sea Wall (GSW)	Jakarta Administration
September 2015	**The government of Indonesia signed Letter of Intent (LOI) with the government of South Korea and the Netherlands** for a joint study on the	The government of Indonesia, South Korea, and the Netherlands

	feasibility of NCICD implementation project, particularly for the phase B and C.	
October 2015	**Jakarta Administration conducted public consultation** to discuss the draft bylaw on Jakarta north coast strategic area spatial planning. The criticism was directed towards the land reclamation project.	Jakarta Administration, the Indonesian Forum for the Environment (Walhi), Tanjung Priok Port Authority, Indonesian Association of Submarine Communications Cable Systems, private developers
18 April 2016	**Coordinating Maritime Affairs Minister, Rizal Ramli, on behalf of the central government, instructed to temporarily halt the construction of reclamation island** in North Jakarta. The decision was taken because of the regulation and authority overlaps issues between the central government and Jakarta Administration on the permit issuance for the construction of reclamation islands in North Jakarta.	Coordinating Maritime Affairs Minister, Jakarta Governor, Environment and Forestry Minister
27 April 2016	**The President held a meeting** with related Ministers, Jakarta, West Java, and Banten Governors in the presidential office. Few important points from the meeting: - BAPENAS was appointed by the President to draft a more comprehensive NCICD plan to ensure that the master plan would address environmental, social, and legal problems. - The government would form a joint committee with varied members from related ministries (Coordinating Maritime Affairs Ministry, Ministry of Environment and Forestry, Ministry of Fisheries and Maritime, Ministry of Land and Spatial Planning, Ministry of Transportation, Ministry of Public Works and Housings and Jakarta Administration) to do the evaluation of North Jakarta coastal reclamation project. - The integration between land reclamation project and NCICD plan	The President of Indonesia, related Ministers, Governor of Jakarta, West Java, and Banten
July 2016	**The Coordinating Maritime Affairs Minister, Rizal Ramli, stated that the team found a heavy regulation violation on the construction of artificial islet (in this case islet G).** The team gave a	The Coordinating Maritime Affairs Minister, Joint committee with varied members from related ministries (Coordinating Maritime Affairs

	recommendation to permanently stop the construction of islet G. The investigation of the task force pointed out that besides endangering the environment, the construction of islet G would disrupt the current submarine power cables and gas pipelines which were situated under the islet and also cause the disturbance of ship traffic.	Ministry, Ministry of Environment and Forestry, Ministry of Fisheries and Maritime, Ministry of Land and Spatial Planning, Ministry of Transportation, Ministry of Public Works and Housings and Jakarta Administration)
July 2016	**The Jakarta Administration refused to follow the recommendation** of the task force and subsequently **sent a letter to President** that explained the ongoing reclamation project has already been conducted properly. The administration stated that there is no clear reason to halt the reclamation as the technical requirements and permission procedures have complied with the relevant regulations.	Jakarta Administration
September 2016	**The newly appointed Coordinating Maritime and Fisheries Affairs Minister, Luhut Panjaitan, on behalf of the Central Government decided to give permission to resume the reclamation project** in North Jakarta that has been previously suspended by then Minister, Rizal Ramli. The decision to continue reclamation project was taken on the basis of the study that involves 7 state institutions, Ministry of Environment and Forestry, Ministry of Maritime and Fisheries, Ministry of Transportation, Ministry of Law and Human Rights, Agency for the Assessment and Application of Technology, Jakarta Administration, and State Electricity Company (PLN).	**Coordinating Maritime and Fisheries Affairs Minister**