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CLIMATE GOVERNANCE AND THE ROLE OF LOCAL INSTITUTIONS IN FACILITATING ADAPTIVE CAPACITY

THE CASE OF THE 'CLIMATE VILLAGE PROGRAM', DKI JAKARTA, INDONESIA

Colophon

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Abstract

The climate resilience discourse has greatly evolved and begun to see the system as complex and uncertain. As a result, the adaptive capacity is now seen as an important element of long-term adaptation to respond to the complex and uncertain element in climate change. This study analysed whether the quality of adaptive capacity possessed within institutions can allow and encourage the community to adapt to complex and uncertain climate change impact through CBA practice. This study chooses DKI Jakarta, Indonesia, as a case study that is now actively engaged in the national program's so-called as 'climate-village program' (Proklim). This program highly relies on CBA practice for climate adaptation actions. The institutions' adaptive capacity investigation undertaken in *Malakasari* and *Cempaka Putih Timur* village in DKI Jakarta Province. The institutions' adaptive capacity is analysed under two layers at the local level: the local government and the community. The findings show that the institutions have not achieved a desirable adaptive capacity state in a way the literature argues. Nevertheless, the existing quality of adaptive capacity within institutions can improve the CBA practice at the neighbourhood level. The analysis uncovers that the difficulty lies more heavily in building adaptive capacity at the community level. The tension between bottom-up and top-down approaches in Proklim implementation seems to hamper the community's ability to improvise, respond more flexibly, and made context-appropriate climate adaptation actions.

Key words: community-based adaptation, adaptive capacity, climate change, institutions

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CBA - Community-based adaptation

Formapel (*Forum Masyarakat Peduli Lingkungan*) – In English: Pro-environment community's forum – A semiformal forum between the community and the government's officials, facilitated at the urban village level.

Kecamatan (Subdistrict) – An administrative area at the neighbourhood level below Municipal/District level. A municipal level in DKI Jakarta Province have 6-10 *Kecamatan*

Kelurahan (Urban village) – An administrative unit at the neighbourhood level, below *Kecamatan*. Kecamatan in DKI Jakarta Province have around 3-10 *Kelurahan*

MoEF - Ministry of Environment and Forestry

Proklim (*Program Kampung Iklim)* - 'Climate village programme'

Proklim *Madya* – Municipal Proklim Award

Proklim *Utama* – Provincial Proklim Award

Proklim *Lestari* – National Proklim Award

PPSM (*Pembangunan Peran Serta Masyarakat*) – In English: Community participation development – Is a name of division under the Provincial Environmental Agency of DKI Jakarta

RW (*Rukun Warga*) – The terms for small neighbourhood units (commune) under the urban village or *Kelurahan.* One *Kelurahan* usually consists of 10-15 RW

SRN (*Sistem Registri National*) – In English: National Registry System – Is a database created by MoEF to provide information about the region's vulnerability and exposure towards climate-disaster event

SSI - Semi-structured Interview

1. Introduction

The climate resilience discourse has greatly evolved and begun to see the system as complex and uncertain (Davoudi et al., 2012). Meanwhile, decentralization in environmental governance is considered as a shift from the coordinative governance model, i.e., top-down planning methods that in many cases often failed to deal with high complexity and uncertainty, such as climate change (Aytur et al., 2015; Zuidema, 2016). Therefore, the idea of adopting the decentralization approach is now broadly discussed in many literatures to respond better to complex problem like climate change. Applying the decentralization modes of governance means that the resource-management is firmly embedded in the local-context (Zuidema, 2016). As the impacts of climate change are primarily experienced locally, some literature also supports that locally-driven action is essential (Agrawal, 2008; Baker et al., 2012). In respect to the decentralization approach in the context of local climate adaptation, the Community-based Adaptation (CBA) in the neighbourhood level is rising as newly resilience-building effort towards climate change because the community is the knowledge holder of local-specific context. Within this shift from central command and control to the decentralization approach in climate change adaptation, it is essential to unpack the local institutions and their role in developing local climate adaptation actions. Among the local institutions which are existed in CBA implementation, there are two dominant layers, namely the local government and the community (Khatri et al., 2013). The successful climate governance depends largely on the existence of these two layers relationships within the institutional settings that can foster adaptive capacity (Gupta et al., 2010; Bourne et al., 2017; Williams et al., 2020).

This study chooses DKI Jakarta, Indonesia, as a case study as it offers an opportunity to build a research based on their history of engagement with decentralization and CBA application. Furthermore, DKI Jakarta is the capital city that labelled as "The fastest sinking city in the world" (Erkens et al., 2015), and a concern of implementing more robust climate adaptation actions is becoming even more prominent nowadays. To overcome the impact of climate change, the Ministry of Environment and Forestry (MoEF) has established a CBA program called as the Climate Village Program (*Program Kampung Iklim* – Proklim) in order to develop such robust climate adaptation, which demands the involvement of local government as well as the community to implement practices to increase climate resilience. This study is focusing on the institutions created within the local government and the community levels in the climate governance scheme. In light of the decentralized approach in climate change adaptation inside the resilience study thinking, this study will focus on how the institutions created between the local government and the community will increase the community's capacity to respond promptly and flexibly to changing climate.

2. Research Question

From the introduction above, it is understood that in order to pursue the adaptive capacity, CBA needs an active role from both community and local governments. This adaptive capacity may enhance the performance of CBA that can tackle better the uncertainties and the ambiguities of

climate change problem in a neighbourhood scale. Their relationships are tied in the institutional settings, which are also embedded in the climate governance system.

Therefore, this thesis' purpose is to answer the following research question:

> *"What dimensions of local institutional adaptive capacity created between local government and community levels have contributed to the success of Community-based Adaptation (CBA) implementation within Proklim implementation?"*

In order to address this research question, this study requires an appropriate case in which the relationship between the local government and the community organizations to perform the climate adaptation action is visible. This research idea started after identifying an artefact that appeared to show this practice, Proklim (*Program Kampung Iklim* – Climate Village Program). Proklim is a national program established by MoEF with cities and urban areas as strategic arenas for the implementation of climate adaptation actions. To be specific, the area of the implementation unit is at the community group level. This program is historically used a top-down approach, but on the other hand Proklim is highly relies on CBA practice to make sure the program's sustainability in a long-run. In general, Proklim requires the active participation of local communities in implementing actions of integrated climate change adaptation, which contributes to the achievement of national greenhouse gas reduction targets and increases the community resilience to the impact of climate change (Albar et al., 2017). The CBA approach in climate change action is relatively new in Indonesia. Necessarily, the local government has a crucial role in supporting community organizations. In this respect, the local government is the first governmental unit which directly coordinates with the ministry. As such, the local government is encouraged to develop strategy to increase the CBA practice, while also developing the local action plan for adaptation (*Rencana Aksi Daerah Adaptasi Perubahan Iklim* - RAD-API) at the policy arena. The Environmental Agency holds the technical implementation unit which is directly responsible for controlling and evaluating Proklim performance. Therefore, this research aims to investigate both layers at the local level: (i) The community-level performance in administering the climate adaptation actions, and (ii) The governments support and control. Several sub-questions are arranged to answer the main research questions:

1. How have the governments supported the community to perform climate adaptation within Proklim?
2. How have community organizations performed climate adaptation actions by receiving support from the government?
3. How are the dimensions of adaptive capacity provided by the local institutions present in the Proklim implementation and contribute to community-based adaptation?

3. Research significance

3.1. Scientific significance

In scientific terms, this research hopefully can contribute to the academic theory on how local institutions can enhance the development of the adaptive capacity towards climate change exposure. This discourse is not entirely new in the academic world, but the institutional context regarding responsibility and mandate to facilitate adaptive capacity and self-organizing patterns

in the community is still vague. Especially in the Indonesia context, there are extensive studies on climate change topics, but further discussion on adaptive capacity is limited to its relation to the vulnerability and sensitivity index. Increasing adaptive capacity for climate adaptation in the CBA approach is defined as the successful decision-making process between the state and the community organizations and institutional arrangements to achieve desirable outcomes (Adger et al., 2003; Ojwang et al., 2017). Meanwhile, the form of the dynamic relationships between the government and the community organizations in performing adaptation measures is still far-reaching. This research aims to address this gap in knowledge on climate change adaptation in the Indonesia context.

3.2. Social significance

As mentioned in the introduction, climate change is a complex and uncertain issue. Therefore, the institutions will face new emerging challenges in the future. In terms of societal relevance, this research can be useful for the DKI Jakarta Province, the municipal government of Jakarta, as well as MoEF, to enhance the performance of the "Climate village program" by arranging institutional framework that supports the development of adaptive capacity in the community that will flexibly respond to climate challenges.

4. The Case Study

4.1. General information of Proklim

Indonesia's cities have been suffering from the global climatic fluctuations caused by climate change. Therefore, the Indonesian government has consistently developed policies and strategic action to overcome this issue head-on. On the national level, the Indonesia government has formulated a National Action Plan for Climate Change Adaptation (*Rencana Aksi Nasional Adaptasi Perubahan Iklim* - RAN-API). However, to increase inclusivity in the community level, the national government through the MoEF of Indonesia has launched the Climate Village Program known as "Proklim," under the regulation of Director General of Climate Change Control, number P.1/PPI/SET/KUM.1/2/2017 (p.13). Proklim is an abbreviation from "*Program Kampung Iklim"* in the Indonesian language. The word *kampung* means village, and *iklim* means climate. This program is performed at the *Rukun Warga* (RW) level , which is an administrative area consisting of harmonious residents, hamlets or *dukuh (See* ***Figure 1****)* where the community has made efforts to perform climate change adaptation and mitigation actions on an ongoing basis (Ministry of Environment and Forestry, 2016). As per the 2016 regulation, the program acknowledges and award local activities for climate change adaptation and mitigation that enhance the community level welfare and are suitable for the local context.

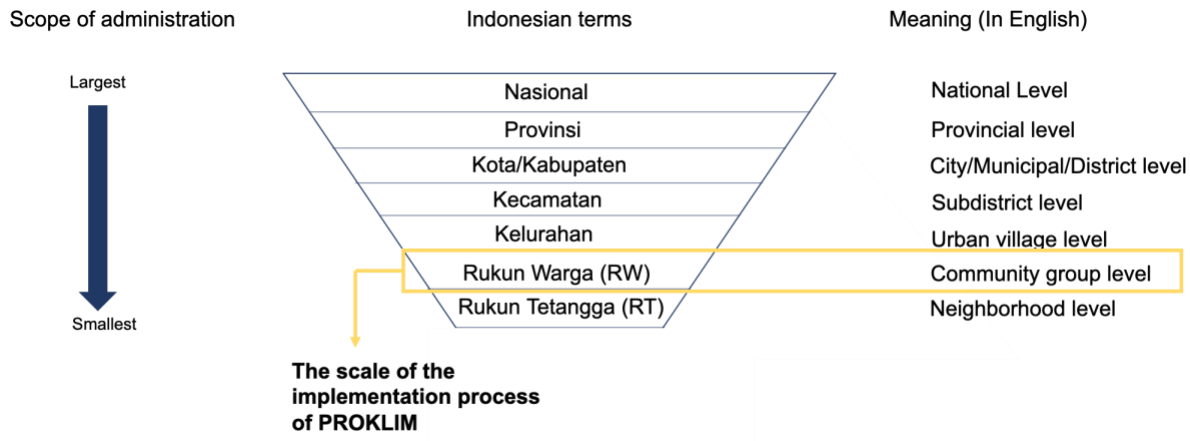

Figure 1 **State administration level in Indonesia (Source: Author, 2020)**

Proklim is a nation-wide program, which aims to bring adaptation policies into local level. This program can be viewed as a decentralized form in climate governance, in which the local level is mandated to create their strategy to boost up the CBA practice. Proklim uses an awarding system, which seeks to recognize the climate actions undertaken at the local level through governmental support and broader community participation. Even though this program is historically used as a top-down approach, but the main goal is actually to stimulate the grassroots-generated solutions to adapt to climate change impacts at the community level. Since the establishment of this program in 2012, Proklim has had a positive uptake by relevant stakeholders at national and municipal levels, with around 2000 villages having registered for it in 2016 (Albar et al., 2016). Proklim mandates the municipal level to participate in managing the climate adaptation action at the community level. As such, in terms of local policymaking, the central commands from the ministry boils down to local authorities' willingness and capability to generate a strategy that aims to monitor the community in performing climate adaptation.

On the other hand, the community is also being demanded to produce locally specific responses in tackling the climate change effect. Some of the activities which are included in climate village program; (1) Rain harvesting; (2) Water absorption; (3) Protection and management of water springs; (4) Water savings; (5) Provision of flood control facilities; (6) Early warning system; (7) Adaptive building design; (8) Planting vegetation; (9) Clean water provision (Albar et al, 2017). It is worth mentioning as well, Proklim is also listed in the 'good practice' database in the "Partnership on Transparency in the Paris Agreement" platform (www.transparency-partnership.net) as an effort to strengthen community-level climate change adaptation and mitigation actions (Rijhwani & Singh, 2019). This platform creates a database which provides an easily-searchable repository of good practice instances where climate action is being effectively designed and implemented throughout the world. As such, this platform offers international learning opportunities. Based on this database, Proklim is deemed to be most successful in encouraging the active participation of communities in rural and urban areas by the development of policies and regulations by the local government, while also stimulating the involvement of other related stakeholders including the community organizations and private sectors (Rijhwani & Singh, 2019).

4.2. The study case: Malakasari Urban Village and *Cempaka Putih* Village

This research takes place at the Malakasari Urban Village which is located in East Jakarta and Cempaka Putih Village located in Central Jakarta. Both of villages have already received Proklim award in national level category, which implies their success in performing climate adaptation actions based on the Proklim assessment process. The major climate disaster challenge in this area is much alike like what Jakarta Province face in general, it is the triple threat of flooding, water shortages and land subsidence.

5. Literature Review and Theoretical Framework

There are two main themes in the literature review, which this chapter aims to elaborate: (a) The climate governance concept in *Section 5.1* and (b) The institutional adaptive capacity theory in *Section 5.2.* Both themes were discussed in the light of adaptive capacity building towards climate change adaptation effort. *Section 5.1* seeks to discuss the existing literature, which leads to the argument on what kind of governance system potentially enhanced the adaptive capacity in the compliance of the CBA approach. On the other hand, the governance and institutions are consolidated because the institutions will determine how the society behaved inside the governance setting, and hence it contributes to the quality of climate governance system. In *Section 5.2,* the concept of the institutional adaptive capacity will be discussed.

5.1. Climate governance: How can it be adaptive?

Climate governance aims to address one of the environmental challenge which is deemed to be the most pressing issue: Climate change (Lemos & Agrawal, 2006). The climate governance is part of the environmental governance, which is defined as "*a set of regulatory processes, mechanisms and organizations through which political actors influence environmental actions and outcomes"* (Lemos & Agrawal, 2006, p.298). Climate change governance can be portrayed as a wide range of options of coordination to respond to climate-related issues (Leck and Simon, 2013). However, tackling climate change demands a governance system to be more 'adaptive,' because the development in climate change discourse has evolved into the complex systems which portray systems not as deterministic, predictable and mechanistic (Folke et al., 2005; Folke, 2006).

There is a relatively new approach to govern climate actions by using the flexible, adaptive governance technique to improve the actor's adaptive capacity. Before jump into that discussion, this section will start by examining the meaning of adaptive capacity inside the uncertainties and complexity thinking in climate change. Afterward, the operationalization of such adaptive capacity in terms of adaptive climate governance system is elaborated. This section also addresses why the CBA implementation becomes one of the focus to increase the adaptive governance.

5.1.1. Adaptive capacity inside the uncertainties and complexity of climate change

Speaking of the term 'adaptive' to climate change issue, it is essential and relevant to discuss the concept of resilience upfront (Gallopín, 2006). Davoudi et al. (2012) have drawn three distinct perspectives on resilience: engineering, ecological, and evolutionary. The evolutionary understanding is the one which includes the risk of uncertainties, complex and unpredictable within the climate change phenomenon. Evolutionary understanding assumes that the delineation between the social world and ecological systems is unpredictable, and further termed as "complex socio-ecological system" (Folke et al., 2005; Folke, 2006; Rammel et al., 2007; Restemeyer et al., 2015; Underdal, 2010). Instead of acknowledging a steady equilibrium after a system faced a disturbance, the evolutionary perspective interprets resilience as the ability of the complex socio-ecological system to change, adapt or transform in response to stresses and strains (Davoudi *et al.*, 2012). Davoudi *et* al. (2012) refers to the evolutionary resilience to the "adaptive cycle".

Based on the adaptive cycle point of view, resilience is not an asset but a process of change. On the other hand, the adaptive capacity is seen as the ability to respond quickly in a flexible manner to changing conditions, both abruptly and incrementally (Davoudi et al., 2012). In line with this, Folke et al. (2005) stated that the capacity to adapt is the most realistic and promising approach to deal with complex issues such as climate change. Therefore, this thesis argues that the adaptive capacity should be possessed by the climate governance settings to tackle better the complex problem like climate change.

5.1.2. The contribution of community-based adaptation to adaptive governance

Governance can have a significant effect on climate change by how they structure the climate-related problems, and conduct their planning to cope with it in a collaborative fashion (Betsil and Bulkeley, 2007). In this study, it is essential to translate the principle of adaptive capacity in terms of adaptive governance. Generally speaking, various themes have emerged from the literature to promote governance capacity, which arguably hold the principle of adaptive capacity inside the resilience thinking. They emerged with slightly different names such as adaptive comanagement (Folke et al., 2005; Armitage et al., 2008), adaptive management (Arvai et al., 2006; Underdal, 2010), resilience management (Walker et al., 2002) and adaptive collaborative management (Kalibo and Medley, 2007). Here, the term 'adaptive governance' is used to cover all these concepts. Overall, all of these concepts promote the governance strategies to foster adaptive capacity by enabling flexible governance frameworks and supporting networks, generating innovative methods of knowledge sharing, performing experimentations, and building the community's capacity. By relying on those approaches, adaptive governance has started to grow as an important contribution to climate change regime, policy solutions, and climate change governance (Brunner and Lynch, 2010).

As indicated in *Section 5.1.1,* climate change in the face of uncertainties demands adaptive capacity within the complex socio-ecological system. Inside the complexity and uncertainty thinking, the operationalization of adaptive governance is to bring broad and active participation of stakeholders (including the communities) and meet an ability to perform an autonomous change (Folke, 2006; Siciliano et al., 2014; Emerson & Gerlak, 2014). Within the governance concept, self-organized means that the decision-making of local actions must be done

autonomously, i.e., without central commands (Corfee-Morlot et al., 2009). Furthermore, Brunner and Lynch (2010) describes that the self-organized manner can be achieved when the decentralization decision-making structure is applied, because it allows complex problems like climate change to be factored into many smaller problems. These smaller problems can be explicitly addressed and concurrently by smaller communities (Brunner and Lynch, 2010; Zuidema, 2016). Thus, engaging the community and the bottom-up pattern in the governance is crucial in adaptive governance. Based on this argument, it is clear that the CBA implementation definitely have a contribution to the adaptive governance. CBA to climate change is an approach to adaptation that aims to include vulnerable people, i.e., the communities in the design and implementation of adaptation measures (Forsyth, 2013). The design of their actions is tailored to the local context at the time. Hence, this approach is believed can generate different solutions in order to adapt and transform.

5.2. Institutional adaptive capacity

5.2.1. Institution and governance

This thesis is written based on the perspective that the adaptive climate governance can be pursued if the institutional capacity among actors also have an adaptive characteristic. Governance and institutions are highly correlated, as Stoker (2018) defines governance as "*a set of institutions and actors that are drawn from but also beyond government*" (p.16). Moreover, the governance system's quality is also determined by the set of institutions that work within it (Gonzales and Healey, 2005). Specifically, in the frame of CBA practice, adaptive governance refers to how the institutional settings develop to satisfy the needs of the community in a changing environment (Hatfield-Dodds et al., 2007). Therefore, it is useful to explore the literature that discusses how the institution should work to create an adaptive capacity that can contribute to the application of adaptive climate governance.

Institutions are described as the frameworks of norms, rules, and practices that structure action in social contexts (Buitelaar et al., 2007). They are often expressed in two kinds of forms; (1) Formal rules and structures, and (2) Informal norms and practices, in the rhythms and routines of daily life (Gonzales and Healey, 2005). Institutions are systems that structure human behaviours and interactions, and hence, institutions will determine how society responds to environmental change (Young, 1999). The adaptability in managing climate change within the governance system depends on how decision-making was made. According to Innes (1998), creating institutions will determine how that decision-making process will be performed through the design of regulations and implementation strategies. In achieving adaptability, Innes (1998) refers to the creation of institutions that "*allow self-organizing systems to do the job*" (p.184). Furthermore, Buitelaar et al. (2007) mentioned that much attention in institutions is usually sought to build institutional capacity in which agents can unfold their creative practices to adapt to changes within collaborative processes. That statement is consistent and corresponds with the criteria which the adaptive governance also tries to achieve.

5.2.2. The adaptive capacity wheel: Institutional determinants of adaptive capacity

Simply put, the adaptive capacity, as discussed in the earlier chapter, can be seen as the ability of individuals and groups to respond to and shape change through learning and flexibility to maintain or improve a desirable state in the unpredictable change (Engle, 2011). Gupta *et al.* (2010, 2016) comes up with literature that attempts to bridge the existing institutions' theory and governance, with the emerging literature adaptation and adaptive capacity to develop a conceptual and methodological framework to assess how institutions can promote the adaptive capacity of societies. Gupta et al., (2010, p.461) explicate what does adaptive capacity mean when it is applied to institutions - it is "*the inherent characteristics of institutions that empower social actors to respond to short and long-term impacts either through planned measures or through allowing and encouraging creative responses from society."* The literature provides an analytical tool to assess institutions' adaptive capacity, namely the "Adaptive capacity wheel," which consists of 6 dimensions (***Figure 2***).

***Figure 2 The adaptive capacity wheel (Source:* Gupta *et al.*, 2010)**

In this research perspective, both governments and communities should have adaptive capacity to improve the performance in climate change adaptation actions. This research does not attempt to assess all of the dimensions in the 'adaptive capacity wheel' because some lie outside the frame of what this research wants to investigate. This research includes four dimensions to be investigated; (1) leadership, (2) Room for autonomous change, (3) Variety, and (4) learning capacity. The reason behind the selection of these dimensions is because the dimensions of 'room for autonomous change, variety, and learning capacity are seen as integral to adaptive capacity and hence, considered to be the necessary qualities (Gupta et al., 2008; Gupta et al., 2010). These dimensions are the potential inherent flexibility of institutions (Munaretto & Klostermann, 2011). Meanwhile, the leadership dimension is included because this study wants to probe how the institution can steer the community's behaviour so that they willing to perform the climate adaptation action, which kind of necessary in explaining their motivation, especially in the CBA process. For the sake of this study, the dimensions of 'fair governance' and 'resources' are excluded. The four chosen dimensions are discussed in the following subchapter.

5.2.2.1. Leadership

Leadership in this matter strongly related to the government's role and public policy (Biesbroek *et al.,* 2010). Leadership is fundamental for realizing climate change adaptation actions, especially when the implementation is given to the local community. Leadership is a process of social influence in which leaders develop meaning, define the problem, and consequently formulate actions that have to be undertaken (May, 2015). The contribution of leadership is needed in terms of the establishment of policies to direct transition in the community to be willing to take action in climate adaptation, guiding the adaptation practices that are long-term and sustainable way, and changing the institutions or rules of the game among actors in performing those practices (Meijerink & Stiller, 2013). These contributions depart from the view that there is a basic need for leadership to devise and implement adaptation policies. In other words, leadership is a driver for change by showing a direction and inspires other actors to follow and promote conformity to a development path (Gupta et al., 2010). We cannot deny that policy is still holding a critical role in regulating modern societies (Meijerink & Stiller, 2013). Also, it is widely discussed that adaptive capacity in the governance system needs coordination between different levels, actors, and sectors in which the role of a leader is becoming prominent to make sure the coordination process happens. Within this dimension, the focus is on how institutions encourage leaders to emerge and reshape the institutions themselves.

In the light of complexity theory regarding climate change, the leadership may also escalate the adaptive capacity of organizations and systems. Based on the understanding provided by the previous section, in the case of a complex and uncertain problem such as climate change, leadership needs to promote innovation, stimulate experimentation and learning, and facilitate dialogue between various actors. There are four different leadership concepts in the light of climate adaptation that is mentioned by Meijerink and Stiller (2013) which are; (1) Leadership in the policy process; (2) Leadership for connectivity; (3) Sustainability leadership theory and (4) Complexity leadership theory. By considering this research framework, which predominantly built based on the complexity in climate change management, The complexity leadership theory expressed by Meijerink and Stiller (2013) is the most suitable. In essence, the emerging property of leadership based on complexity theory is the *'adaptive leadership'* – that is, '*a collaborative change movement that emerges nonlinearly from patterns of interaction between agents'* (p.246). Meanwhile, the output expected from this kind of pattern is adaptability, creativity, and learning (ibid). Meijerink and Stiller (2013) also mentioned the two complementary attributes of adaptive leadership, namely administrative leadership and enabling leadership. Further description can be seen in ***Table 1***.

Table 1 **Attributes needed in adaptive leadership**

Leadership	Definition	Roles
Administrative leadership	Refers to leadership as the actions of individuals in formal managerial positions, in a form of top-down and hierarchical leadership based on authority.	- Creating long-term visions which may engage in planning, coordination, and resource acquisition - Take decisions and impose policies
Enabling leadership	Refers to the ability to create the necessary conditions for enabling adaptive leadership, and to manage the entanglement between	- Fostering interaction and interdependency • Interaction can be stimulated by working groups/open workplaces

Leadership	Definition	Roles
	administrative and adaptive leadership.	• Interdependency is a condition to joint action. It may be stimulated by enforcing parties to cooperate - Create 'adaptive tension' to stimulate creativity and learning • E.g., stimulating heterogeneity of ideas, skills, and preferences, or by imposing certain objectives

Source: Author, based on Meijerink and Stiller (2013)

The broad outline drawn from the literature is the notion of both top-down (e.g., planning coordination among governmental levels) and bottom-up (e.g., engaging broad actors including community) approach are both necessary for climate and adaptation. Furthermore, both agree that the positional leaders should contribute to generating collaborative networks within actors and stakeholders that aim to enable conditions in which experimentation, creativity, and learning can be promoted. This section also indicates that even though the adaptive governance lies in the idea of bottom-up initiatives, the leader's role still holds the success key to encourage and direct the willingness in the micro-level (e.g., community) to perform climate adaptation actions.

5.2.2.2. Room for autonomous change

The second dimension is the 'room for autonomous change' – it is the capacity of an institution to allow social actors to autonomously adjust their behaviour in response to environmental change (Gupta et al., 2010). Autonomous change is equal to 'self-organization,' which occurs without central control to direct actors' behaviour. This ability is the key feature of the Complex Adaptive System (CAS) (Duit and Galaz, 2008). The expected result of adaptive leadership that previously discussed is the emergence of this feature. According to Gupta *et al.* (2010), there are three criteria of institutions that need to present in this dimension. First, this dimension demands institutions that enable stakeholders and actors to anticipate future events and decide preventive measures against the possible threats. This criterion is important, especially at the lower levels of governance such as community, and particularly during a crisis or disaster because studies show that spontaneous efforts are usually performed by the 'victims' and not by the government. According to Gupta *et al.* (2010, 2016), this institution's capacity can be promoted by providing stakeholders with the necessary means and adequate information. The first criterion is linked to adaptive governance in terms of the decision-making process, in which the decision-making must be taken from the knowledgeable stakeholders about the environment that they are trying to deal with (Aytur et al., 2015). The second criterion is that institutions should also foster individuals and organizations' autonomous capacity to make improvisation (Gupta *et al.* 2010). In this sense, improvisation is equal to the ability to conduct experimentation, and therefore, the institutions can flexibly change their preferred strategy based on the environmental challenge at the time. Finally, the third criterion is the institution's capability of acting according to plan (Gupta *et al.*, 2010). The summary of institution criteria in the 'room for autonomous change' dimension can be seen in ***Table 2.***

Table 2 Criteria and their definitions of the dimension of room for autonomous change

Criteria	Definition
Continuous access to information	Accessibility of data within institutional memory and early warning systems to individuals
Capacity to improvise	Increasing capacity of individuals to self-organize and innovate
Act according to plan	Increasing the ability of individuals to act by providing plans and scripts for action, especially in case of disasters

Source: Gupta et al. (2010)

To conclude, the required autonomy in the adaptive society is the capability of social actors to autonomously review and adjust their institutions in response to environmental change. In this regard, institutions should allow and motivate actors to self-organize, design, and reform their institutions.

5.2.2.3. The needs of stakeholders involvement (variety)

Gupta *et al.* (2010) state that the variety indicates institutions' ability to encourage the involvement of a variety of actors. Therefore, it will lead to a broad range of perspectives and solutions. Because climate change problems are complex and unstructured, involving diverse interests and preferences, dealing with such issues requires multiple perspectives and solutions (Engle, 2011). This research is focussing on the relationships between the governmental bodies and the communities. Based on Gupta et al. (2010), the variety of relevant stakeholders includes the different sectors and levels of governance in the formulation of policy related to climate adaptation measures. Some literature on adaptive governance supports the idea of 'variety' (Ostrom, 1996; Bartley et al., 2008; Mathias et al., 2017; Carlisle & Gruby, 2019; Di Gregorio et al., 2019). These authors suggest that the adaptive governance approach must be supported by the flexible institutions characterized by multi-level governance with some degree of autonomy, complemented by overlapping authority and capability.

5.2.2.4. The continuous learn (learning capacity)

The learning capacity dimension based on Gupta *et al.* (2010) refers to the ability to revise existing knowledge and understanding to enable adaptation. Learning can be considered as an adaptive behaviour (Pelling et al., 2008). Gupta et al. (2008) suggest that learning means that a greater understanding of a situation can be achieved based on experiences. Also, learning permits actors to reiterate strategy and action based on experiences (Folke et al., 2005). Therefore, institutions should allow social actors to continuously learn and experiment too, in turn, improve their institutions (Gupta et al., 2010; Meijerink and Stiller, 2013). Experimentation refers to the notion of considering the management of climate actions as experiments while also yielding new knowledge about ecosystem function and responses to the climate actions (Huitema et al., 2009). An experimental approach in adaptive climate adaptation means that the decision-makers seek strategies that can be modified once new information becomes available. In this sense, reversible, flexible and incremental solutions are preferred in dealing with uncertainty (Lee, 1993). Since climate change adaptation is a relatively upcoming phenomenon, the learning capacity can be defined as being able to listening and discussing doubts rather than defending existing values, routines, and problem perceptions and solutions (Termeer et al., 2012).

5.2.3. The relationships between the local governments and the communities in CBA practice

At the basic concerning the climate adaptation action, the governments contribute to design and implement policies to achieve climate adaptation goals, and regulate behaviours of society to start adapting. At first, the central government initiatives jumpstart the locally based policies (Urwin and Jordan, 2008). However, at the local level, the local government plays a crucial role in developing local policies based on the local context circumstances, and coordinating the planning and implementation of development activities (Khatri et al., 2013). Having said that the adaptive governance is surrounded by highly uncertain aspect, it is important to underline that the policy development also needs to be viewed as a continual experiment proceeding via informed trial and error (Nelson *et al.,* 2008). The most significant effort in terms of the CBA approach, local government is expected to introduce small projects to the community and give the community flexibility to innovate through these small-scale projects. However, the CBA in climate adaptation still needs to allow the community to manage its land and its resources and utilize the indigenous management skills to cope with climate change (Reid, 2016). In other words, their self-organizing capability plays a role so that the resource utilization will depend on the local-context at the time.

The local governments are arguably well-positioned to encourage climate change adaptation by encouraging local people to participate in local policies and decision-making processes. It is believed that local municipal authorities have the capability to facilitate the participatory procedure by supporting strong relationships with other urban actors who have the expected technical capacities to address many challenges caused by climate change (Friedmann, 2005). Concerning the adaptive capacity, the urban actors refer to the new sets of actors, including the private sector and the local community. Here, the study's focus is on the relationships between the local government and the community in the CBA practice. In the CBA approach, the focus is to pay attention to the interactive learning between the community and the government officials. As such, adaptive governance assesses the degree to which the governance process helps the community adjust their own rules over time, thus increasing the likelihood of these rules being effective in responding to uncertainty caused by climate change (Andersson & Ostrom, 2008).

5.3. Final synthesis and theoretical framework

This research argues that the adaptive climate governance mode can be achieved if it endorsed by the institutional adaptive capacity. For this research objective, the institutional determinants that should be possessed by the governments and the communities to pursue adaptive capacity must be determined. First thing to note, the literature review that has been elaborated expresses that in building adaptive capacity, the interactive way between the local government and the communities created in the institutional setting is required (***Figure 3***). The schematic diagram on how the literature review section is used to determine the institutional determinants that this research wish to investigate in the level of governments and communities can be seen in ***Figure 4.***

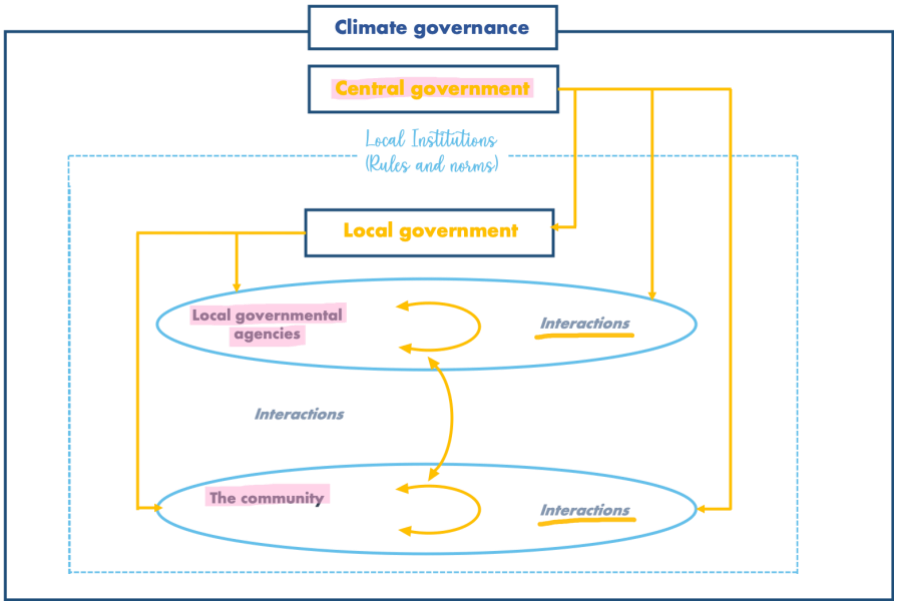

Figure 3 Theoretical framework for climate governance in terms of the governments and the communities interactions at the local level. Adaptive capacity is a result of interactive interactions among them. (Source: Author, 2020)

Based on the literature review, this thesis determines that the **'leadership'** institutional determinant is delegated to the governments. The governments hold the primary role as a driver of change. In practical terms, they should provide a robust centralized basis such as regulation and policy in the regime arena to support CBA practice. As such, those regulations and policies become instruments that can steer and push the behaviour in the society in which they are willing and capable of doing the adaptation action. To conduct such a job, the local governments' need a strong leadership. For the **'variety'** institutional determinant, the broad actors means engaging not only local authorities, but also the private sector and the community. Discussing private sector involvement is not the focus of this study, and the participation of the community is already clearly evident in CBA practice. Therefore, the 'variety' dimension will be probed more to the local governments because the climate policy should encourage the various governmental bodies across levels and sectors to collaborate to generate a variety of climate adaptation solutions. Engaging as many actors as possible contributes to knowledge production in understanding the changing circumstances in the environmental problems, which is deemed an uncertain and complex issue.

The provision included in the set of regulations and policies might give the impression that they belong to the instrument that shapes the formal institutions. However, building adaptive capacity in the governance system should provide rooms for autonomous actions to respond quickly to the changing environment. By that, institutions should work to act flexibly. For that reason, the literature review also come up with the debate about the inadequate approach of the coordinative model of governance, which only relies on such regulation and policy. The literature mentions that all actors in the governance system should have the capacity to perform an autonomous change. However, in the CBA implementation, the grass-root movement that originated from the community level becomes central and a key to the ability to perform autonomous change, as they are the ones who directly receive the impact caused by climate change. Therefore, the

institutional determinant of **'room for autonomous change'** will be analysed heavily on the community level in this research.

The presented literature express that strong initiatives from the community will emerge when the decentralization modes of governance are applied. Decentralization will give the local government authority to produce their strategy based on local-context, and bring the community closer to the decision-making process. Hence, the community's response should be tailored by the local context and the environmental issue at the time, which will lead to the flexibility in managing climate change. However, the community actions should also be scaled up to gain government response, after which they need to interact so that the government can facilitate the community-based climate adaptation based on their needs. This kind of interaction is dynamic and continuous, e.g., monitoring climate adaptation measures and experimenting with new climate adaptation actions. Henceforth, the institutions embedded in the governance system between the governments and the communities will determine the adaptive capacity. It depends on how that two interactive ways of continuous learning and knowledge sharing produce dynamic feedback to keep responding to climate change impact. Therefore, the **'learning capacity'** determinant will be investigated in both levels of governments and communities.

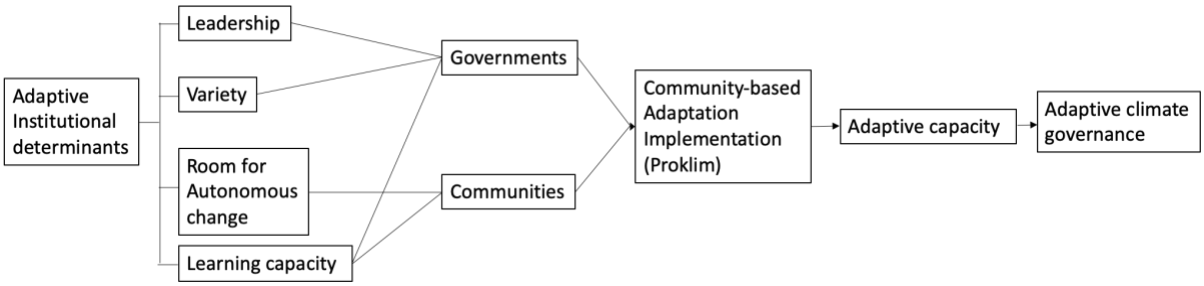

Figure 4 Schematic diagram of the literature review. (Source: Author, 2020)

Table 3 presents the institutional determinant of adaptive capacity followed by the indicators that discussed in the literature review

Table 3 Institutional determinant adaptive capacity dimensions followed by the indicators

Level	Institutional determinant adaptive capacity dimensions	Main Sources
Governmental bodies	**Leadership**	Gupta et al. (2010) Meijerink and Stiller (2013) Davoudi et al. (2012)
	A. Administrative leadership	
	Long-term visions	
	Take decisions and impose policies	
	B. *Enabling leadership*	
	Fostering interaction and encourage collaboration	
	Create 'adaptive tension' to stimulate creativity and learning	
	Variety	Gupta et al. (2010)
	Encourage the involvement of a variety of 'actors'	
	Includes the different sectors and levels of governance in the formulation of solutions	
	Learning capacity	Gupta et al. (2010) Folke et al. (2005) Davoudi et al. (2012)
	The provision of monitoring and evaluation processes of policy experiences	

Level	Institutional determinant adaptive capacity dimensions	Main Sources
	Reiterate policy and strategy based on experiences	
Communities	**Room for autonomous change (Self-organization)**	Gupta et al. (2010)
	Continuous access to information	
	Capacity to improvise	
	Learning capacity	Folke et al. (2005). Gupta et al. (2010)
	Ability to learn from the past experiences	
	Reiterate community-based adaptation actions based on experiences	

Source: Author, based on the literature synthesis, 2020

The connection between the two concepts of adaptive governance and institutional adaptive capacity will be further operationalized in terms of the empirical work to answer the research question (will be further clarified in ***Table 4***, *Section 6.3.1*).

6. Methodology

6.1. Research approach: The qualitative case study

This study adopted a qualitative case study approach (Yin, 2003). This approach enables the researcher to conduct an in-depth exploration of phenomena within some specific context (Rashid et al., 2019). The case study approach is based on the constructivist paradigm, meaning that the truth is relative and depends on one's perspective (Stake, 1995; Yin, 2003). Therefore, this paradigm recognizes the importance of the subjective human creation of meaning but does not reject outright some notion of objectivity (Baxter et al., 2008). Furthermore, constructivism is built upon the premise of the social construction of reality (Searle, 1995). Hence, a collaboration between the researcher and the participant is fundamental so that the participants willing to tell their stories (Crabtree & Miller, 1999). Therefore, the received stories from the interviewees will be used to describe their views of reality, which enables the researcher to comprehend the participants' actions.

This study aims to investigate the CBA implementation within the Proklim platform in the light of a decentralized approach in governance settings. Arguably, this study uses DKI Jakarta as a case of such relevant settings. First, Jakarta represents a region which experiences disaster threats caused by the climate change; land subsidence with a ratio of 0,8 cm annually (Santoso, 2018), a sea-level rise which increases 0,57 cm per year (Measey, 2010), and intense rainfall that caused perpetual flood disaster (Moe et al., 2015). Second, DKI Jakarta has participated in Proklim since 2014, and since then shows positive development and increased trend in registered number of the village that engaged in the program (Mahendro, 2017). Third, DKI Jakarta (Indonesian: *Daerah Khusus Ibukota Jakarta* – English: Special Capital Region in Jakarta) is the capital city as well as a province in Indonesia. Therefore, DKI Jakarta is governed by both provincial and municipal governments, which embody the complex multi-level, cross-sectoral authority, and interrelated actors (Santoso, 2018). Even though in general, DKI Jakarta performs a top-down governance approach, but the environment in climate adaptation action is done by the bottom-up approach with proven adaptive planning efforts (Mahendro, 2017).

A case study has three necessities that ascertain its quality: External validity, construct validity, and reliability (Edmonds and Kennedy, 2012). External validity refers to whether inferences from the findings can be drawn and are likely to be relevant for other cases (Flyvbjerg, 2006). This is extremely challenging to ensure because the climate change impact and adaptation efforts is highly depends on the local context. Luckily, the theoretical framework helps to generalize research findings to a degree of what has been found in other studies. In order to construct validity, this research used multiple sources to collect information such as reports from the government official and documents obtained from the communities regarding their local climate adaptation actions proposal. By the time the researcher analyzed the source from the interview, reviewing those documents is done continuously. Finally, the research's reliability means that other researchers can reproduce the results by following the identical data collection procedures (Baškarada, 2014).

6.2. Unit of analysis

In the qualitative case study approach, it is crucial to create boundaries for the case (Stake, 1995). Therefore, it is suggested to define time, place, and activity (Stake, 1995; Creswell, 2014) and definition and context (Miles and Huberman, 1994).

6.2.1. Spatial boundary

Defining the contextual boundaries is challenging, particularly inside the overarching problem like climate change. Based on the expert recommendation and the searching of appropriate study cases in the Proklim village database, the selected site in this case study research located in two administrative cities in DKI Jakarta; East and Central Jakarta. Two hamlets are chosen in East Jakarta; RW 02 and RW 03 are located in the same administration border of *Malakasari* Urban Village. These two villages are close to each other. However, based on the neighborhood classification, the two villages have different characteristics. Based on Mahendro (2017), RW 02 is classified as a middle-class settlement, while RW 03 is classified as a middle-low class settlement. In central Jakarta, the study area is located in *Cempaka Putih Timur* Urban Village, specifically in RW 03 hamlet, which classified as middle-class settlement (Mahendro, 2017).

6.2.2. Time frame

Climate change phenomenon is going to keep evolving, and so are the climate adaptation efforts and the governance and institution settings. Therefore, clarifying the research's timeframe is vital for the validity and reliability of the research. The research was conducted from February 2020 until August 2020, and the fieldwork was conducted between mid-April and mid-May.

6.3. Data collection

6.3.1. Semi-structured interviews (SSI)

The qualitative SSI is a data collection strategy in which the researcher asks informants a series of predetermined but open-ended questions (Given, 2012). An elastic agenda of open-ended questions allows the researcher to do extended probing (Adams, 2015). As such, the advantage of this method is that interviewer is in control of getting information from the respondent but is

free to follow new leads as they arise (Partington, 2001). SSI method is suitable for understanding both formal and non-formal dynamics in institutional settings within the process of community and government interactions in performing climate adaptation actions. Even though SSI does not need a fixed instrument to be read to the interviewee, the interview guide is required as an outline of planned topics and questions to be delivered and arrayed in tentative order (Adams, 2015).

Before the fieldwork, the making of the interview's guide was approached through the conceptual operationalization of the research topic (see ***Table 4***), because the interview questions should derive based on previous knowledge (Kallio et al., 2016). The purpose of this is to translate the research interest into the set of evaluation criteria that will be investigated in the field. The guide remained flexible throughout the interview. However, topics and questions were added depending on the emerging focus of the study. The interviews use the online conversation (e.g., WhatsApp call, skype). All of the interviews were recorded and later to be transcribed for the analysis purpose.

Table 4 Conceptual operationalization process of the research topic

Conceptual operationalization Process				**Instrumental operationalization**
General research topic	**Research sub-questions**	**Institutional determinant**	**Interview Categories**	**Semi-structured interview question topics**
What dimensions of local institutional adaptive capacity created between local government and community levels have contributed to the success of Community-based Adaptation (CBA) implementation in DKI Jakarta	How have the governments supported the community to perform climate adaptation within Proklim?	Leadership (Administrative)	Take decisions and impose policies	The long-term visions for community-based climate adaptation
				Authority ability to make and implement decisions regarding to Proklim
				Authority is not determined by other actors/decision-making entities
			Flexible policy or strategy	Is there any room for improvisation to develop a new strategy in implementing Proklim?
		Leadership (Enabling)	Fostering interaction and encourage collaboration	The ability of actors to direct and motivate other actors to follow
			Adaptive tension to stimulate learning and creativity	How the government facilitate flows of ideas within the governmental bodies?
				How the government facilitate flows of ideas within the communities?
		Variety	Active participation in the level of governmental units	The coordination between the ministry, provincial environmental agency of DKI Jakarta, and the municipal?

Conceptual operationalization Process				Instrumental operationalization
General research topic	**Research sub-questions**	**Institutional determinant**	**Interview Categories**	**Semi-structured interview question topics**
				The coordination between governmental bodies across sectors
			Active participation in the level of community units	What government do to increase the number of community's participation?
		Learning capacity	Learning from experiences	What government do to obtain implementation data of climate adaptation action at the community level?
				Joint activities that entail learning (e.g., meetings, decision-making, monitoring and enforcement, *etc.)*
			Feedback from the learning	Is there any new strategy developed by the agency to improve the climate adaptation action based on the experiences?
	How have community organizations performed climate adaptation actions by receiving support from the government?	Room for autonomous change	Climate adaptation actions	What kind of activities of climate adaptation action performed in your village? How well the community utilize the natural resource-based on their local context?
			Ability to adjust to changing circumstances	Capacity to improvise Ex: Refer to the massive flood event in January 2020. What community done in their village?
			Access to information	How the communities obtain the information regarding the climate adaptation measures?
		Learning capacity	Openness towards uncertainty	Are there any unpredictable event that is caused by the changing climate?
			Flows of ideas and resource?	Is there any workshop or training from the government?

Conceptual operationalization Process				Instrumental operationalization
General research topic	**Research sub-questions**	**Institutional determinant**	**Interview Categories**	**Semi-structured interview question topics**
			(Interactive learning from government to community)	
			Flows of ideas and resource? (Interactive learning from community to community)	Is there any forum to share your experimentation to other villages?
	How are the dimensions of adaptive capacity provided by the local institutions present in the case study of Proklim and contribute to the CBA implementation ?	None	None	Researcher's interpretation based on the gathered data and its connection to the theory

Notes: For the sake of clarity, the questions are not fully formulated as presented in the table. See **Appendix C** for interview guide with list of questions for the interview.

6.3.1.1. Choosing interviewees

This research aims to gain both governmental actors' and community's perspectives. For the community's side, *the snowball sampling* method was used to identify the interviewees. Snowball sampling uses a small pool of initial informants to nominate other participants who meet eligibility criteria for a study (Given, 2012). First, interviewee 1 (coded as PRK) as a facilitator for the environmental program for almost five years from RW 03 became an initial resource person. Later, PRK recommends interviewee 2 (coded as SRE), who is also a facilitator from RW 02 (the neighbor of RW 03 settlement area). Therefore, these two people became an initial set of research participants, and they assist the researcher in recruiting additional participants into the study (the list of full participants can be seen in **Appendix A**).

For elite governmental respondents, the *purposive sampling* was used. The governmental elites are chosen at every governmental level; (1) Central government, which in this case represented by MoEF, (2) The Provincial Environmental Agency, and (3) The Municipal Environmental Agency of East Jakarta and Central Jakarta. In MoEF, the selected informant is the Director of Climate Adaptation. At the provincial level, Proklim is administered under the PPSM (*Indonesian: Pemberdayaan Peran Serta Masyarakat* – English: Empowerment of community participation) division. Therefore, the purposive respondent is directed to the head of the PPSM section. In the municipality level, the head of the environmental agency in East and Central Jakarta are chosen

to be interviewed first. Worth mentioning is that all interviews have been conducted respecting ethical and privacy aspects, only following explicit consent of participation by the interviewees, informing the purpose of the study, and ensuring confidentiality.

6.3.2. Focus group discussion (FGD)

While conducting the fieldwork, the researcher also had been invited to facilitate FGD by the head of the PPSM section of the Provincial Environmental Agency to obtain more depth information from the staff members. The researcher used online focus groups via *cisco webex online meeting.* Online focus groups are not a different type of FGD per se. This method is borne out by the introduction of the internet as an adaptation of the traditional method (O.Nyumba et al., 2018). The researcher was facing difficulty that already expected as the disadvantage of this method. Some participants are prone to technical problems such as poor or loss of connectivity and failure to capture non-verbal data (O.Nyumba et al., 2018).

6.3.3. Documents

As part of the data collection process, a variety of secondary data also been gathered, including regulations, report documents of Proklim implementation in DKI Jakarta (particularly on the case study area), and relevant research which discussed Proklim. The researcher analyzed the substance in the regulations to get the general arrangements of Proklim implementation which administered by the governmental agencies, as well as how the regulations accommodate the connection between the officials and the community (The list analysed regulations can be seen in **Appendix B**). Also, the researcher's collaboration with the Provincial Environmental Agency leads to a recommendation of several readings; The report of implementation process on Proklim, the Provincial Environmental Agency's internal research on Proklim, which mainly focusses on the institutional and capacity building in the village sites, and other relevant documents. Interestingly, the researcher also had been shared the village's adaptation action plan document (In the form of powerpoint file) by the PPSM division staff. The adaptation action plans are produced by the community in regards to the Proklim implementation. This presentation file was purposely made by the community to be presented to the governmental agency in the sharing session. Throughout the analysis, these documents were used as a valuable input. The researcher cross-checked the information obtained from the interviewees with the information in the documents.

6.4. Analysis

This research uses the content analysis method, with the help of Nvivo software. Once the interviews were transcribed, the next step was to enter the coding step. The interview transcriptions were broken down into several relevant themes that represent findings that are valuable in answering the research questions. At the beginning of the coding process, the codes are based on the interview categories (***Table 4***), which are the breakdown of the institutional determinants variables which I built based on the theoretical framework. In other words, the coding categories were split into two categories: (1) the information from the governmental group and (2) the communities group. However, as the coding process was ongoing, noteworthy themes emerged and created additional codes (or even alter the previous codes). For instance,

this could be the information kept being repeated by the respondent in which they consider it an important topic to be conveyed during the interview. This unrestricted manner of coding is known as an open coding (Strauss, 1987). The use of Nvivo software made it easy to produce a codebook from each category and code that been made during the analysis, which is essential in analysing qualitative research.

7. Empirical input and analysis

This chapter contains the information that was obtained from the gathered data (interviews, FGD, and information from documents if necessary). This chapter will start with the case introduction in *Chapter 7.1.* Then, *Section 7.2* shall establish the information to answer the first research sub question in which the description of the governments' role in supporting the community to perform climate adaptation. Then, the opposite perspective side of the story conveyed by the community is discussed in *Section 7.3* to provide information to answer the second research sub question.

7.1. Introduction to the case

Proklim is using a tiered awarding system, which comprises of three levels of awarding; (1) Municipal Proklim award (Proklim *Madya*); (2) Provincial Proklim award (Proklim *Utama*); and (3) National Proklim award (Proklim *Lestari*). The assessment for the award conferment takes place each year throughout the Indonesia's region. For the assessment purposes, MoEF has established a qualitative criteria as a guide (Albar et al., 2016). The appointed governmental personnel who responsible for visiting the village site and do the monitoring, assistance, and assessment tasks depend on the awarding types that the village wishes to pursue. The village for Proklim *Madya* nomination will be assisted by only the Municipal Environmental Agency, while for Proklim *Utama* nomination will be assisted by both Provincial and Municipal Environmental Agency. When the village achieves the Proklim *Utama* award, the Provincial Environmental Agency will supervise them to get the Proklim *Lestari* award (The highest level of Proklim award), within which MoEF is involved in the step of the assessment process.

During the interview, this tiered awarding system is keep being repeated from all of the governmental elites respondents in order to clarify that their involvement in a particular village must be corresponds with the village nomination status. Both of the study case villages in Central and East Jakarta is already achieved the Proklim *Lestari* award from MoEF. Hence, all three levels from the municipal, provincial, and national governmental bodies had involved in guiding the community to perform climate adaptation actions.

Malakasari and *Cempaka Putih Timur* village have experienced joining the past municipal program regarding environmental concern. Before Proklim, both villages participated in the 'Jakarta Green and Clean' program in 2008. The program covers the environmental aspects such as domestic waste handling, improved water flow, and planting trees. Both villages were being approached by the Municipal Environmental Government to upgrade their neighbourhood environment-related activities and join Proklim in 2017. One thing to bear in mind, besides climate adaptation actions, Proklim also covers the mitigation actions to reduce greenhouse gas emissions to be performed at the community level. Having interviewed the communities

in *Malakasari* and *Cempaka Putih Timur* village, the discussion with the respondents could not be separated from the mitigation component (e.g., solid and liquid waste management, utilization of renewable energy/energy saving, the improvement and preservation of vegetation cover). However, this study only focuses on the climate adaptation actions. Regarding the local climate vulnerability in the area, the respondents informed that the neighbourhoods mainly put the efforts to prevent heat, drought, and flood. ***Table 5*** provides the climate adaptation actions performed in *Malakasari* and *Cempaka Putih Timur* village.

Table 5 Description of climate adaptation actions performed in the study case

Activities	Climate adaptation actions	Description	Performed in…
The prevention and control of drought and floods	Water absorption	The aim is to improve water absorption, reduce water surface runoff, and restore water into the soil as optimum as possible through bio pore hole and infiltration wells.	*Malakasari* and *Cempaka Putih Timur*
	Rainwater harvesting	The aim is to collect and reserve the rainwater. The collected water is utilized to handle the drought event.	*Cempaka Putih Timur.*
	Enhancing vegetation cover	The aim is to reduce heat island effect and impacts related to high rainfall.	*Malakasari* and *Cempaka Putih Timur*
	Protection and management of water springs	The aim is to minimize the risk of drought event. The action includes, plant conservation around the water springs.	*Cempaka Putih Timur*
	Flood control facilities and infrastructure	The aim is to anticipate the change of rainfall pattern by building the facilities for flood protection. The action includes the development of dams and flood reservoir, flood embankment polder, and flood retention areas.	*Malakasari* and *Cempaka Putih Timur*
	Adaptive design of building	The aims is to anticipate the flood by modifying the house building construction, e.g., elevate the structure of the building.	*Malakasari*
Food security improvement	Urban farming	The activity contribute to solve food supply problems. The activity	*Malakasari* and *Cempaka Putih Timur*

Activities	Climate adaptation actions	Description	Performed in…
		combines the agricultural, livestock, and fishery to strengthen food security.	
	Utilization of housing yard	The aim is to ensure the availability of various food ingredients continuously for the fulfilment of family nutrition. The activity is to cultivate various types of crops in the house yard.	*Malakasari* and *Cempaka Putih Timur*
Control of climate-related diseases	Sanitation and clean water	The aim is to prepare the provision of clean water to anticipate the water scarcity.	*Malakasari* and *Cempaka Putih Timur*
	Disease vector control	The aim is to control of disease-carrying vectors to anticipate the emergence of climate change-related disease (e.g., diarrhea, malaria, dengue fever). The example of activities include to improve the environment so that there are no water puddles, and insert fish in ponds/potted plants.	*Malakasari* and *Cempaka Putih Timur*

Source: Interview and document analysis

7.2. The governments' support in Proklim implementation

7.2.1. Leaderships

7.2.1.1. The Initiator - The Ministry of Environment and Forestry (MoEF)

Proklim is a national-scale program, which seeks to steer the community's participation in climate adaptation actions. Proklim is coordinated by MoEF under one of its regulations (Regulation about the Climate Village Program - *Proklim* Number P.84/MenLHK-Setjen/KUM.1/11/2016). The central goal of the establishment of this regulation is to bring communities closer to the climate mitigation and adaptation efforts, as the Director of Climate Adaptation of MoEF stated:

> *"Proklim regulation begins with the notion that we need to explore the village community's aspiration. Climate change is widely felt by the communities throughout the region in Indonesia, but they do not understand what does it means by the 'mitigation' and 'adaptation' strategy even though they practically already done that in their territory. Proklim aims to give the community*

> *education about these mitigation and adaptation efforts and give them recognition when they sustainably perform it"* (TNR, 06.05.20)

Under this regulation, the legitimacy and authority are given to the local level government to implement the CBA practice. The regulation also resulted in raising awareness at the local level and helping to build the local governments' leaderships to tackle climate-related issues. MoEF provides trained personnel to conduct capacity building activities at the provincial and municipal levels (TNR, 06.05.20). Here, MoEF, as the representation of the central government, holds the primary leadership role in order to drive the local level governments to enforce the Proklim regulation. Hence it necessitates the local governments to establish their regulation at the city level to support the Proklim implementation. However, inside the decentralized governance system, the provision of climate adaptation inside the Proklim platform is often received as an 'aspirational' only, and the sincerity of the local government to address Proklim in their local regulation is not uniformed in all of the regions. The Director of Climate Adaptation of MoEF further stated:

> *"We are now putting effort to coerce the local governments to develop the local strategy regarding the Proklim implementation. By that, we will give an appreciation to the local governments who have been able to put the Proklim agenda in the local policy and regulation"* (TNR, 06.05.20)

MoEF gives the appreciation to the community through the ceremony in which the village will get the 'Proklim trophy' if the village passes the assessment category for Proklim *Lestari* (National Proklim Award). The Director of Climate Adaptation also keep repeated that Proklim should not be understood as a 'By-Project' program, but its emphasis on the long-term sustainability of activities. In other words, Obtaining Proklim award is not a dead-end goal. However, it is a recognition for the villages that been capable of performing climate adaptation actions based on the criteria established by the MoEF, and the community shall keep increasing their capacity to respond to the upcoming climate change impact in their village territory.

> *"The Proklim trophy is only going to be given to the village community who conduct the climate adaptation and mitigation for a minimum of two years. We do not want the community perceives Proklim as a 'by-project' agenda, but something that they must self-sustain in the future"* (TNR, 06.05.20)

To conclude, based on the citation above, the respondent implicitly expressed that MoEF possesses the administrative leaderships, that is the ability to set a long-term vision for climate adaptation action and impose a policy to be enforced in the local level. Proklim is not a problem-solving agenda to only consider the climate change impact at the time, but a long-term strategy which hopefully can increase the community capacity to be ready for the future impact.

7.2.1.2. The Provincial Environmental and Municipal Environmental Agency of DKI Jakarta

The information gained from the interview with the respondents from the Municipal Environmental Agency and FGD with the Provincial Environmental Agency in DKI Jakarta shows that the role from these two levels of the governmental body cannot be separated because they are linked and overlapped within each other.

In the DKI Jakarta Province level, Proklim implementation is under the supervision of the PPSM Division in Provincial Environmental Agency. DKI Jakarta province begins actively involved in climate adaptation actions inside the Proklim platform since the governor established the "Governor Instruction for Proklim Implementation Number 91/2016", which become the basis for the province to develop the provincial regulation regarding the Proklim. Governor Instruction also mandates the municipal government to establish the "Mayor decree" to specify what kind of strategy that the municipal level formulates to comply with the governor instruction. In regards to the study case in this thesis, both East and Central Jakarta established the "Mayor decree for Proklim implementation" in 2019. However, based on the interview session with the governmental elites of Municipal Environmental Agency, the municipal level under DKI Jakarta Province already been active to enforce Proklim since 2017 with only use the Proklim regulation from the ministry as their orientation (LTF, 15.05.20; AD, 19.05.20). In fact, the Mayor decree was formulated in the light of what already conducted in the field (LTF and RTU, 15.05.20).

Ideally, the Provincial Environmental Agency will start to be involved in the field together with the Municipal Environmental Agency to assist the community if the village is nominated to the Proklim *Utama* award. In the meantime, before the village reaches that status, the provincial is only responsible for directing the Municipal Environmental Agency to conduct socialization and the technical guidance in the village sites. First, the municipal agency will seek the potential village in their district where the community already performs the climate adaptation actions (FTH, 10.06.20). The information about the potential village is obtained from many sources, but predominantly from the subdistrict level who already have the list of villages that want to participate in Proklim (FTH, 10.06.20; LTF, 15.05.20). In other words, it is not difficult to search the Proklim village candidates as the community itself enthusiast towards the Program. The respondent from the government staff who involved directly in the field visit and implementation in the climate-village sites explained that the community's high motivation and enthusiasm are one of which caused by their eagerness to gain the existence in their district by being reputable (AD, 19.05.20). Almost all the village candidates are already doing 'something' in regards to the climate adaptation, and Proklim becomes a platform for them to showcase their efforts (CT, 10.05.20; AD, 19.05.20; PRK, 02.05.20). Also, by joining in the Proklim platform, the community will obtain supplementary resources from the government (e.g., budget) in which the community assumes it will increase their climate adaptation performances even more (PRK, 02.05.20; SRE, 07.05.20).

After the village candidates are listed, the Municipal Environmental Agency will set a strategy for increasing the community's capacity to perform climate adaptation action besides what they have already done (FTH, 10.05.20; AD, 19.05.20). This capacity building can be formed as a workshop, counselling, training, and technical guidance (AD, 19.05.20; FTH, 10.05.20; LTF; 15.05.20). In this state, cross-sector agencies are going to be invited to give a training to the community, and it depends on what kind of climate adaptation action that wants to be strengthened in the neighbourhood (The description about the variety of municipal agencies involved in Proklim will be further clarified in Section 7.2.2).

During this process, the provincial level will monitor the village score in the assessment of climate adaptation action that is done by Municipal Environmental Agency, and make sure that the score is keep increasing until comes the time when the score is sufficient for Proklim *Utama* nomination, and they will help the field assistance. However, what happens in the

field is slightly different from the ideal mechanism. The respondents from the Provincial Environmental Agency stated that they want to accelerate the process of community capacity building because they admit that Municipal Environmental Agency has limited resources (FGD, 10.05.20), so relying on the Environmental Agency only for fieldwork means that the progress will be slow. Meanwhile, the provincial level has an ambition to propose a high number of villages to be nominated for Proklim *Lestari* each year.

> *"In principle, Proklim is a tiered program, so the field assistance for Proklim Madya is fully under the Municipal Environmental Agency responsibility. In practice, however, often time we jump into the field to assist the community to ensure their score will keep increasing. To be fair, this is not ideal. We do this because there are only a few staff sources at the municipal level, and administering Proklim is not their only job. In case if the report shows that the village progress is slow or even deteriorating, like it or not we should help and assist the community directly"* (RT, 10.05.20)

The same pattern is also made if the village is stuck in the Proklim *Utama* category and faces difficulty upgrading to Proklim *Lestari.*

> *"Last year, we have ten villages to be proposed for the Proklim Lestari award, but we found that the community adaptation actions were stuck. Then we communicate to the staff in the ministry to provide an assistance program."* (ER, 10.05.20)

Interestingly, both the Provincial and Municipal Environmental Agency generates its own method to gain the community's commitment to performing climate adaptation actions. Provincial Environmental Agency create a forum agenda which they named it as '*Rembuk Warga*' (In English: Community's consultation). '*Rembuk Warga*' is a forum between the government officials and the community to discuss the climate adaptation actions that the community proposes to be implemented in their territory. It also a channel for the community to express their rejection or approval to a set of climate adaptation actions recommended by the governmental agencies. As one of the respondents from the Provincial Environmental Agency stated that:

> *"Rembuk Warga aims to generate the final consensus between the governmental agencies and the community. Proklim is a highly community-based climate adaptation program, so the community must hold the final consent. Through 'Rembuk Warga,' we will make an agreement document that includes the list of activities that are going to be developed in the village."* (CT, 10.05.20)

Meanwhile, the Municipal Environmental Agency in Central Jakarta approaches the community through the forum of the "Pro-environment community" (In Indonesian, this forum is abbreviated into '*Formapel*'). This forum is not a kind of formal forum per se but a channel for pro-environment figures to express their notion to the environmental problem in the neighborhood, and together, the forum participants will discuss the possible solutions. The Municipal Environment Agency utilizes this forum to interact with the community and socialize Proklim in the most moderate and relaxing manner to gain the community's openness to the Proklim Program (AD, 10.05.20).

Based on this section descriptions of leaderships, ***Table 6*** will provide the conclusion on the leaderships characteristic possessed by the three levels of governmental agencies for administering Proklim.

Table 6 The leaderships of the three levels governmental agencies in Proklim implementation

	The Ministry of Environmental Agency (MoEF)	**The Provincial Environmental Agency**	**The Municipal Environmental Agency**
Administrative leadership			
Long-term visions	Proklim is a long-term strategy which aims to build the community's adaptive capacity to prepare for the future climate change impact.		
Take decisions and impose policies	The establishment of Proklim regulation (Regulation Number P.84/MenLHK-Setjen/KUM.1/11/2016).	DKI Jakarta Province have enforced Proklim regulation and produce their own regulation towards the program.	The municipal commitment towards Proklim is legalized through the 'Mayor Decree'.
Enabling leadership			
Fostering interaction and encourage collaboration	The ministry regulation has arranged the necessity of collaboration between the municipal and provincial agencies. The awarding system to give the community's recognition is deemed to be successful in motivating the community to participate in the Proklim platform.	There is an active interaction between the provincial and municipal agencies.	The Municipal Environmental Agency collaborates with the cross sectors municipal agencies.
Create 'adaptive tension' to stimulate creativity and learning	A routine formal meeting between the MoEF and Provincial Environmental Agency.	Creativity and learning are potentially built in '*Rembuk Warga'* Forum as the community and the government officials are sharing thoughts.	A semi-informal forum between community and government staff (e.g., *Formapel*) can boost creative ideas from multi-actor.

Source: Interview, 2020

7.2.2. Variety

Proklim implementation design follows a strategic approach that opens the opportunity for a variety of actors to support the community's actions (Rijhwani and Singh, 2019). Besides the governmental bodies, Proklim also involved the private sector partnerships, the national and the international development organizations, and even the NGOs. It is not the scope of this paper to elaborate on these stakeholders. Here, the focus is on governmental institutions. Several respondents indicated that within the governmental institutions, Proklim implementation entails the collaboration across sectors from the municipal agencies.

Throughout the interviews, all of the respondents from the governmental staff explicate that the involvement of cross-sector agencies is required in Proklim implementation. The predominant reason for this is that climate adaptation actions are varied, and every municipal agency's competency will add valuable perspectives (AD, 19.05.20). The municipal environmental agencies are responsible for coordinating the variety of agencies at the municipal level (RT, 10.05.20; LTF, 15.05.20).

> *"It is not only the environmental agency that conducts the community assistance program, but there are also plenty of municipal agencies involved. For example, for the greenery program such as Urban Farming, the Food Security and Agricultural Agency will help to assist the community. We are the one who should keep the coordination with the cross sectors agencies and ask for their involvement when it necessary. Nevertheless, still, the environmental agency will be the one who assesses the community's performance."* (LTF, 15.05.20)

However, as already delivered in the previous section, the Provincial Environmental Agency is interfering with the municipal level in order to boost up the community's performance in climate adaptation action. Therefore, in some states, the Provincial Environmental Agency also holds the task to coordinate with the across sectors agencies, and they are not feel burdened by this task (RT, 10.05.20). All of the respondents from the governmental elites stated that the importance of engaging as many agencies as possible is to generate a wide range of solutions inside the Proklim implementation that can be implemented in the neighbourhood (AD, 19.05,20; RTU, 15.05.20; RT, 10.05.20). Based on the interview, ***Table 7*** provides the list of agencies that assist the community in the municipal level of DKI Jakarta.

Table 7 List of municipal agencies involved in Proklim

Name of Agency	Task	Source
Food security and agricultural agency	Improving food security of the local area. Assisting the community in regards to the agricultural cultivation and urban farming. Giving a recommendation on yard utilization	SRE, 07.05.20 ADN, 20.05.20 FTH, 10.06.20
Forestry agency	Assisting the community to increase the vegetation coverage (Mainly to address heat and flood problems)	ADN, 20.05.20
Water resource agency	Assisting the community in regards to the water infiltration, protection of water resources, saving water use, and water resources alternatives (e.g., rainwater harvesting)	PRK, 02.05.20 SRE, 07.05.20
Industry and energy agency	Assisting the community in regards to energy conservation (related to climate mitigation)	LTF, 15.05.20
Health agency	Not directly related to Proklim agenda. The Health Agency assists the community in habituating a healthy lifestyle (e.g., a clean water resource). Give a supervision regarding climate-related disease (e.g., dengue fever which caused by the aftermath of flood event).	PRK, 02.05.20 LTF, 15.05.20
Cooperatives, small and medium enterprise agency	Not directly related to Proklim. However, the community has been able to produce quite large amounts of food products (e.g., aloe vera and tubers) from urban farming activity in which they wish to trade. The agency helps the branding and marketing process.	HR and ER in FGD, 10.05.20

Source: Interview, 2020

In essence, this variety of agencies are hopefully can bring the diversity to make the tailored-made climate adaptation strategies. On the one hand, it aims to promote the inclusion of agencies and perspectives and positively add the diversity of climate adaptation solutions to be offered to the community (RT, 10,05.20). On the other hand, one of the respondents employed by the Municipal Environmental Agency of Central Jakarta to conduct the field training activities observed the community's reluctance towards the proposed solutions given by the variety of

agencies. The list of various solutions from the agencies is seen as just another technocratic approach from the community's perspective (YDO, 11.05.20).

> *"The communities were shocked when they were first presented the list of possible strategies by the government staff. Deep down, some of them feel burdened and rather choose not to participate in the Proklim platform if only they knew if it will burden them."* (YDO, 11.05.20)

7.2.3. Learning capacity

As part of the learning capacity, the government group needs to keep monitor and evaluate their experiences in making the intervention effort to the community and consider it as a feedback so they can improve their strategy latter on. Proklim involves many levels, sectors, and actors. The development of regulations and instruments that specify Proklim realization arrange the suggestion for those sectors and actors to contribute to the monitoring process since the beginning. The monitoring process of Proklim implementation from the government at the neighbourhood level is confirmed as a periodic agenda by all respondents in governmental elites (TNR, 06.05.20; LTF, 15.05.20; RTU 15.05.20; AD, 19.05.20; FTH, 10.06.20). Nevertheless, none of the interviewees convey that the monitoring process contributes to the learning process in terms of strategy improvement in their first answer statement to the given questions. The monitoring agenda is predominantly considered as an obligation to ensure that the community's action in performing climate adaptation measures is getting better for the sake of climate adaptation assessment in the Proklim awarding mechanism (AD, 19.05.20; RT, 10.05.20). In particular, it is expected that the monitoring process will improve the implemented projects. What has been observed by the governmental staff in the field will be discussed in their routine meeting anyhow, mainly to describe the community's progress and challenges to the specific climate adaptation action (AD, 19.05.20; LTF, 15.05.20). Thus, the result of the meeting merely focuses on reactively solving the existing problem at the time (RT, 10.05.20), and not to proactively develop a new climate adaptation strategy by taking into account the unexpected climate-related phenomenon in the future.

Fortunately, the monitoring agenda is not the only channel for the government to learn. The collaboration of various actors and agencies (as discussed in the 'variety' dimension) in climate adaptation action has also enhanced the learning process, for instance, discussing information and knowledge (AD, 19.05.20; FTH, 10.06.20). There is a forum that facilitates the multi-actor to do the discussion such as 'Pro-environment community forum - *Formapel*' in which occasionally invites the government staffs from multiple agencies (AD, 19.05.20; ADN, 20.05.20), as it has been said by one of the respondents:

> *"Our discussions (refer to the staff from other agencies) help us to rethink knowledge and understanding on what should be done"* (AD, 19.05.20).

However, the expression of 'what should be done' is still rather vague. The differentiation of single-loop and double-loop learning might give a perspective in this regard. Single-loop learning can be understood as 'how to do things better,' meanwhile, the double-loop learning means 'learning how to do better things' (Munaretto & Klostermann, 2011). The interviews tried to seek (as many authors argue) that whether the learning capacity will result in better responses to the climate change impact by being open mind to the uncertainties and allows a reflection on the existing implementation in order to generate a better strategy (Double-loop learning). However,

what is perceived by most of the respondents to their learning process is count more heavily on the single-loop learning. The governments focus on the effort to change attitudes in administering Proklim that could lead to the enhanced effectiveness of the existing climate adaptation actions, e,g. intensify the training program (AD, 10.05.20; LTF and RTU, 15.05.20), more inclusive socialization agenda (AD, 10.05.20; FTH, 10.06.20), and employed an expert to conduct community's capacity building (RT, 10.05.20; YDO, 11.05.20). In other words, they are somewhat still trapped in the 'government inertia,' in which there is no advancement of what can they do to improve the community's climate adaptation action. For instance, it can be seen from this statement:

> *"We are focusing on how to develop new strategies and approaches to bring more people in the village a to perform a similar project as in the village b"* (FTH, 10.06.20)

To conclude, even though there is a potency of willingness to learn from each other among the government staff across agencies, they have not yet covered the ability to forecast the possible climate-related impact to the local area. By far, the learning processes contribute merely to improve routines from the existing projects. Hence, generating new tactics to tackle climate change that might affect them in the upcoming span in the neighbourhood level is still far-reaching. Accordingly, the government's effort to experiment with a new strategy or policy was not found during the field investigation.

7.3. The community's performance in CBA practice in Proklim

7.3.1. Room for autonomous change

In terms of policy design from the ministry, Proklim does not explicitly allows the flexibility for the community to develop their climate adaptation action since the list of approved actions that will be accounted in the assessment process is specified in the Proklim regulation (Regulation Number P.84/MenLHK-Setjen/KUM.1/11/2016, Article 6). At a glance, it might give an impression of the rigid policy formulation in which there is no room for autonomous action. However, the field investigation found that there are several indications in which the community can create innovations to the climate adaptation actions.

The first thing that support room for autonomous change has been indicated by the Director of Climate Adaptation of MoEF. The respondent from the ministry stated that the crucial step to participate in Proklim is that the community must be able to identify their vulnerability context towards the climate disasters (e.g., flood, landslide, extreme heat, drought) (TNR, 06.05.20). Moreover, the respondent explained that natural resources in their territory must be taken into account. The climate adaptation strategy that the community wishes to develop is desirably compatible with the possible climate disaster exposure and their natural resources, and the community is free to determine the local climate adaptation actions based on their interpretation. Worth to mention as well, Proklim's general operational environment is progressively developing, in which the tools have been added to enable communities to estimate, monitor and validate the impact of their activities through integrated data called as 'National Registry System' (*In Indonesian: Sistem Registri Nasional – SRN*) (Albar et al., 2017). Ideally, through the assistance process with the local government, the community will include the SRN data into consideration. Given that way, the climate adaptation strategy will be context-dependent, and there is no

absolute climate adaptation formulation that can be easily copied and pasted from one village to another (TNR, 06.05.20). The respondent also continued that SRN also provides information on how the community can contribute to making the neighbourhood area more climate adaptive, for example, promoting the use of permeable pavement to prevent threats of flooding. Therefore, the communities have access to adequate information to do something useful to climate adaptation measures, but also flexible to create their initiatives.

> *"We indeed have a list of climate adaptation action criteria, but due to the diversity of local context, the community might have other initiatives ... We are open to adaptation options outside the criteria that have been listed in the Proklim regulation. In fact, we consider it as a value-added in the assessment process."* (TNR, 06.05.20)

Indeed, what has been said above lies in the realm of an idealist perspective. Nevertheless, moving on to the study case sites in this research, the community's ability to adjust to changing circumstances is not as fluid as it hoped. There are both factors that are enabled and disabled the potency for the room for autonomous change.

For the enabling factor, the governmental agencies' staffs both at the provincial and municipal levels generally understand that in principle, the adaptation actions cannot be enforced forcefully (AD, 19.05.20; RT, 10.05.20). Therefore, they act as an intermediary, or an actor who inhibit the 'in-betweenness' relationships throughout the governance system, occurring between the community level and regime actor (Kivimaa et al., 2019). As an intermediary, they collaborate with the local community, and together they identify what adaptations are appropriate to be performed that agreed upon. In this regard, the community is being given the freedom to express their threats linked to the climate disaster/event and propose their solutions or initiatives (TNR, 06.05.20; AD, 19.05.20; FTH, 10.06.20). Their proposal to certain practices will be conveyed in the form of presentation in the routine meeting agenda (e.g., the *Formapel* forum and *Rembuk Warga* forum), or in the form of a report (PRK, 02.05.20; ADN, 20.05.20; FGD, 10.05.20), which they named it as '*Rencana Aksi Lokal*' (In English: Local Climate Action). Through the formulation of Local Climate Action, the community is given the room to improvise (ADN, 20.05.20). This statement also supported by all of the respondents from the community members, in which they agree that the government is open to discussion on the new possibilities of activities or practices (PRK, 02.05.20; SRE, 07.05.20; ADN, 20.05.20). For example, the respondent from *Malakasari* village informed that in their neighbourhood, the urban farming movement was ultimately their initiative (SRE, 07.05.20). The respondent said that this idea was first developed because of the community's hobby to do farming in the house yard started in 2008, long before DKI Jakarta adopted Proklim. The respondent and other community members in the village develop innovation and learning about new strategies/technologies for efficient food production, for example, by utilizing the hydroponic technique due to the infertile soil (SRE, 07.05.20).

For the disabling factor, the community shows a little knowledge of the notion of climate risk and the correlation to their climate action. Throughout the interview with the government elites, the finding shows that the focus on their fieldwork at the community level towards Proklim is heavily to increase the number of adaptation projects for the sake of climate adaptation assessment by the MoEF (FTH, 10.06.20). Once the climate adaptation projects were set up, both the governments and the communities see the projects like any standard development projects (e.g., water harvesting in drought conditions; bio-pore infiltration hole as a water absorption method to reduce the flood effect), rather than a response to climate-related event. Throughout the

interview, the respondents, particularly at the community level, did not emphasize the knowledge inputs to the intervention they are doing, rather than to comply with the general guideline of Proklim implementation. As a consequence logic of this mindset, the community hardly comes up with a new creative solution to improve their CBA project towards the possibilities of climate events in the future. The interviewees on the community level were asked about their response towards the 2020 Jakarta floods caused by the heavy rainfall, which became the worst flood event since 2007 that killed 66 people (Kahfi, 2020). The interviewees expressed that the flood did not severely impact their neighbourhood, thanks to their effort in participating Proklim (PRK, 02.05.20; SRE, 07.05.20; ADN, 20.05.20). However, their neighbourhoods are still suffering from the flood puddle. One of the respondents stated that there is nothing they could have done to such an extreme flood disaster. By this statement, it can be concluded that the communities are not planning to make an adaptation plan if the same disaster happens in the future.

> *"The 2020 Jakarta floods is a city-wide disaster, caused by the lack of government's preparedness. Only when the government have a large-scale solution, this kind of massive flood can be prevented"* (ADN, 20.05.20)

To conclude, autonomous change within the communities is important to build an adaptive capacity. It can be very beneficial in CBA implementation, for which the community has to be made willing to contribute adapting and develop expertise or creativity to think of possible solutions. In the case study, it has been found that the government has provided information on the climate vulnerability index followed by its consequences, which hopefully will give the local governments' and the community's understanding of why the adaptation action is important and give options on what can be done. The local government is putting effort to facilitate the community's capacity to improvise, and communities have been able to produce their initiatives. Sadly, the community's improvisation only counts to a lesser extent towards future climate adaptation preparation. Also, the community's motivation barely shows the need for adaptation based on their understanding of the consequences of inevitable climate disaster. In general, the community still oriented heavily to the practical guidelines of Proklim.

7.3.2. Learning capacity

Each village and RW in the case study have environmental activist(s) who actively do the coordination with the government's official. The environmental activist became the leading person in the community to introduce climate adaptation actions. CBA has two significant features: (1) Raising awareness on climate change and (2) The integration of possible climate risks into the adaptation projects (Dumaru, 2010). The interviewee from the ministry said that Proklim was designed partly in order to educate the community about the climate change impact (TNR, 06.05.20). The climate change awareness was notably appreciated by the environmental activist or the community leaders who encouraged and motivated the community members' involvement in Proklim (PRK, 02.05.20). In this regard, the environmental activist in each village already put an effort to share their knowledge to the community about the importance of taking climate adaptation actions, which also became the agenda to evoke the community's motivation to join Proklim (PRK, 02.05.20; ADN, 20.05.20). However, several respondents said that the most common reason why the communities finally decided to participate in Proklim is because the 'envy' feeling when the community visited the 'Proklim' village which they deemed to be more 'green,' 'clean,' and 'clement' (AD, 19.05.20). Also, the 'Proklim' villages are frequently visited by

the government's officials and even the Mayor. Therefore, they want to be in the spotlight as well (AD, 19.05.20; ADN, 20.05.20). Eventually, the indication of whether the communities fully understand the knowledge about the possible future effects of climate change is hard to be confirmed in this research. Consequently, it is hard to say that the communities are fully aware that the adaptation projects they proposed in their neighbourhood suitable to the possible climate risks or not.

Nevertheless, the interviewees indicated several activities at the community level that entailed learning. For example, the field visits/tours by the government's officials to the village site were given a learning about the problem definition and potential solutions. Also, the government was introducing the environmental education/awareness-raising to the communities. The regular meetings which involved the communities and the government's staff, such as *Formapel* (See the 'variety' dimension), was given the learning about different actor's perspectives and their expectations on local climate adaptations. The interviewee stated that the outcomes of such meetings with the governmental actors "*help the communities was useful to give an idea of what could be done"* (AD, 19.05.20). Even though the communities are the knowledge holder of the local environment changes, at the beginning of their participation in Proklim, they nevertheless often have limited knowledge of the possible strategies to cope with those environmental changes (FGD, 10.05.20). Hence, most of CBA initiatives have used the co-learning approaches, in which the external knowledge by the experts, i.e., the Environmental Agency's staffs on the climate change and adaptation and the community's knowledge about their area complement each other through a knowledge-sharing process.

However, the finding uncovers what the government has shared with the communities was only to comply with the Proklim general guideline. There was no critical substance in which the government and the communities can think about different strategies tailored to the local context. Still, it is count as a valuable knowledge for the community. As the CBA approach is new in Indonesia, the CBA projects do not necessarily reject the use of general guidelines of Proklim implementation. In addition, the training workshops and the climate action planning (e.g., problem identification, solutions formulation and drafting plans), helped the communities to learn about the management approaches (SRE, 07.05.20; RT, 10.05.20). The project implementation itself gave the learning on the local and technical knowledge (FTH, 10.06.20; LTF, 15.05.20; AD, 10.05.20).

Moreover, Proklim gives an incentive to the communities for being able to develop learning capacities amongst themselves. For instance, if a village that has reached the Proklim *Utama* Award (the 2nd highest level of the Proklim awards) desires to reach the Proklim *Lestari* Award (the top level of Proklim awards), it needs to assist at least ten other villages (TNR, 06.05.20). The respondent from the ministry said this scheme was designed in order to increase the robustness and long-term sustainability of the program, and improved the effective implementation of the activities undertaken (TNR, 06.05.20). The communities share and receive other villages' or RWs' experience in conducting climate adaptation actions, and they learn from each other. Both *Cempaka Putih Timur* and *Malakasari* village are already achieving the Proklim *Lestari* award, which means that they have done the process of assisting other villages. The communities in *Cempaka Putih Timur,* RW 03 have successfully assisted more than ten RWs at the same subdistrict/*Kecamatan*. At the moment, there are 30 RW in *Cempaka Putih* subdistrict that also participated in Proklim. Among those 30 RW, 10 RW have obtained the

Proklim *Madya* award (Proklim award at the municipal level), and the rests are still in the assessment process, and it was delayed due to the Covid-19 pandemic (AD, 19.05.20; ADN, 20.05.20). The staff from the Municipal Environmental Agency stated that it is vital to support CBA activities as many as possible by sharing the experience and knowledge gained among one village to another (AD, 19.05.20). However, as stated by the respondent from the ministry, with a little awareness of climate change impact and the low capacity to identify their neighbourhood's vulnerability towards climate disaster, the 'learning' will might bring the risk to only copying other's adaptation strategy (See *Section 7.3.1*). Even though in this particular case, copying strategy from one RW to another under the same district is probably still relevant because the climate vulnerability in the area is relatively the same.

Lastly, as already discussed in the 'room for autonomous change' dimension, the communities are still predominantly following the Proklim practical guidelines. Based on the interview, the government approach in introducing the climate adaptation actions to the community is by giving them training and socialization, which generally based on the Proklim guidelines as well. Both in *Malakasari* and *Cempaka Putih Timur* villages, the field findings did not found approaches such as 'trial and error' or 'learning by doing,' which may be more experimental and reflective in the adaptive process. Thus, the communities hardly reflect on the climate measures which they are doing. They still have the mindset that Proklim is a Municipal program in which they are willing to participate, rather than CBA approach in which the goal is to build a community's capacity to face the consequences of environmental changes. As such, there is no orientation towards innovation and experimentation to improve the climate adaptation action based on the community's feedback on the action's effectiveness on certain climate events. In other words, the communities do not adopted the 'learning from experiences' approach. Once one project was set up, the focus is mainly on the maintenance for the sake of long term sustainability (LTF, 15.05.20).

8. Discussion and conclusion

This research started with the overall question; are the dimensions of institutional adaptive capacity created by the local government and communities visible in the practice of Proklim? This thesis concerned with two layers of local institutions; the local government and the community. In *Chapter 7,* the role of each layer is examined in the light of adaptive capacity building towards CBA implementation. In this chapter, the result of that information will be discussed in relation to the theory and formulate answers to the third sub research question; how are the dimensions of adaptive capacity provided by the local institutions present in the Proklim implementation and contribute to community-based adaptation? Afterward, this chapter will be ended by the conclusion to answer the main research question.

8.1. Findings

As a reminder, this study used the dimensions based on the adaptive capacity wheel from Gupta et al. (2010) to investigate the interaction between the local government and communities in Proklim practice. As seen in ***Table 3*** (*Chapter 5*), the investigation on the government consists of three institutional adaptive capacity determinants; (1) leadership, (2) variety, and (3) learning capacity. Meanwhile, two institutional determinants have been examined at the community level; (1) Room for autonomous change and (2) learning capacity. In general, the government group

has a favourable adaptive capacity characteristic of 'leadership'. Meanwhile, for 'variety' and 'learning capacity' dimensions, several critical points will be discussed. It leads to the argument that some factors are shown to hamper adaptive capacity in these two dimensions. For the community level, the findings discover that they have not achieved the desirable adaptive capacity in 'room for autonomous' and 'learning capacity' dimensions suggested by the literature. Nevertheless, some community's attitude has been confirmed that the community might be on the way to have adaptive capacity.

For the 'leadership' dimension, the role of the central government through MoEF in facilitating CBA implementation will be discussed first. Although this thesis' analysis is targeted at the sub-national level, i.e., DKI Jakarta Province, this research also includes MoEF to be interviewed, and it was proven that MoEF provides an enabling environment for local governments to mainstream CBA practice. The findings indicate that MoEF is having both characteristics of administrative and enabling leadership based on Meijerink and Stiller (2013). For administrative leadership, MoEF has been able to create a long-term vision for which they are fully aware that the adaptation strategy should be performed sustainably (Gupta et al., 2010). MoEF then framed the adaptation action as a community issue and should be performed at the local level. However, MoEF notices that the recognition of the climate adaptation actions at the local level throughout Indonesia's region is relatively low. Hence, MoEF initial attempt was to educate the local government and the communities about building a climate-resilience neighbourhood by performing adaptation actions. To do that, MoEF imposes the CBA to be conducted at the local level by establishing the 'climate-village program' (Proklim) regulation. In this regard, MoEF acts as an enabler for mainstreaming CBA at the local level through the policy instrument. MoEF's role in performing administrative leadership is formed as a top-down approach based on authority (Meijerink and Stiller, 2013). In this case, top-down approaches provide leadership in the form of a concrete policy goal, so the local governmental agencies are directed to work towards that goal.

At a glance, the top-down approach contrasts with the spirit of CBA. Usually, the CBA initiative's success is understood as a result of the design and delivery of grassroots-generated solutions to adapt to climate change impacts (Gogoi et al., 2014). However, the analysis also reveals that the design of Proklim regulation uses both top-down and bottom-up approaches. For the bottom-up approach, Proklim allows the community to identify their vulnerability and critical issues in their territory and propose solutions to address it. Surprisingly, even though MoEF is the representative of the national government, MoEF also has the enabling leadership. Enabling leadership play a role in generating interaction among relevant stakeholder (Meijerink and Stiller, 2013). For the enabling leadership characteristic, MoEF uses the strategic approach that encourages relevant actors (private sector, NGO, governmental bodies, and communities) to collaborate. The collaboration scheme is explicitly arranged in Proklim regulation. As suggested by Gupta et al. (2010), leadership should direct and inspire other actors to follow. The findings demonstrate that MoEF has succeeded in making the lower-level government (i.e., DKI Jakarta Province and Municipal government of East and Central Jakarta) comply with the provision in Proklim regulation. Above all, MoEF holds a significant portion of 'leaderships,' by formulating problem definition on the necessity of community-based adaptation to increase resilience and, consequently, formulate Proklim regulation to actualize CBA implementation at the local level.

Secondly, the CBA mainstreaming through Proklim makes the government of DKI Jakarta Province, as well as the Municipal level (Central and East Jakarta), are 'forced' to create local

policy support and mobilize resources for adaptation projects that have been practiced at the community level. At these two levels, the decision-making regarding adaptation actions is highly decentralized. As presented in *Section 7.2.1.2,* the Municipal of East and Central Jakarta have their own rules and mechanisms on how they approach and empower the community for Proklim implementation purpose. The establishment of the 'Governor instruction' for Proklim implementation and the 'Mayor decree' indicates the decentralized system while also suggests that provincial and municipal levels have administrative leaderships. Such a decentralized decision-making mechanism is in line with the condition requirement of 'adaptive governance' suggested by Brunner and Lynch (2017). With the support from the municipal and provincial levels, small-scale adaptation projects are scaled-up because the CBA solutions are increasingly performed in many neighbourhoods throughout the province. Also, the collaboration arrangement detailed in Proklim regulation becomes the jumpstart so that the Province and Municipal level can foster their enabling leadership. This study found that the Provincial and the Municipal Environmental Agency have been able to manage themselves in scheduling routine meetings to discuss the progress of Proklim implementation, engage a variety of agencies to be involved, and conduct forums with the communities.

The institutional settings for Proklim implementation in DKI Jakarta is proved to have the 'variety' dimension, but turns out not enough to create the maximum desirable adaptive capacity. The collaboration requirement from the ministry strongly supports the 'variety' dimension. For the 'variety' dimension, the multiple perspectives and solutions are the key (Engle, 2011). The multi-level governance system from national, province, and municipal is visible in Proklim implementation. Also, the cross-sector collaboration (as seen in ***Table 7***) adds the positive value in the 'variety' dimension. Several authors suggest that the variety perspective from various actors helps in generating the formulation of solutions to what climate projects should be performed in the neighbourhood (Gupta et al., 2010; Mathias et al., 2017, Carlisle & Gruby, 2019). This statement is confirmed in this study. The potency of adaptive capacity is evident with the fact that cross-sector agencies at the municipal and provincial levels are advising various climate-related projects. However, the analysis shows that those solutions offered to the community is done in a top-down manner. For CBA, this kind of approach is not suitable (Forsyth, 2013). Furthermore, their solutions are somewhat only formed as technical measures based on their own premises. There is also no indication that the offered solutions from the government are 'creative' as well. In practice, the local government is still highly referring to the adaptation action guidelines from MoEF. In other words, the path-dependency is shown.

For the 'learning capacity' dimension, the involvement of various agencies can encourage different actors to collaborate and learn (Gupta et al., 2010; Termeer et al., 2012), and it is confirmed in this study. At the governmental level, two learnings agenda are existed. The multi-actor discussion through forums such as *Formapel (See Section 7.2.3)* facilitated learning among the governmental bodies. Also, the Provincial and Municipal Environmental Agency conduct routine monitoring, and it facilitated learning to transfer knowledge from the government and the community or the other way around. These learning agendas are potentially enhancing their adaptive capacity as long as they can reflect their learning and willing to make changes in their routines based on improving their performance (Gupta et al., 2010). However, in practice, it is a pity that the government staff from the Provincial and Municipal Environmental Agency still view that Proklim regulation is a rigid instrument. While actually, the regulation from MoEF already stated that the climate adaptation action is context-dependent. Specifically, it depends on the

neighbourhood vulnerability and climate-related issues. In this sense, the analysis shows that the local actors are unlikely to adjust their strategy in administering Proklim by considering the future climate patterns. In effect, this hampering the capacity to adapt.

Now moving on to the 'room for autonomous change' dimension at the community level. The autonomous change is predominantly important to be performed by those who directly affected by the climate change event, i.e., the community (Gupta et al., 2010). 'Autonomous' means that the victims initiate the immediate response to environmental change, and not by the government or any aid organizations (Tierney et al., 2006; Gupta et al., 2010). This argument is in line with the underlying idea of CBA practice in the first place, which it aims to bring an active response from the community to perform adaptations. At the community level, the analysis shows that there are both factors that hinder and foster the adaptive capacity dimension of 'room of autonomous change.' Aytur et al. (2015) suggest that the community's ability to perform 'autonomous change' is the critical feature in CBA as they are the expert about the environment they are trying to deal with. Unfortunately, this study discovers that although the community knows their neighborhood adequately well, but without adequate awareness-raising about the climate change impact from the government, the new solution towards climate adaptation actions is difficult to emerge.

Moreover, even though the design of Proklim implementation from MoEF gives room for autonomous change, the analysis indicates that the Provincial and Environmental Agency prefer to use a top-down approach. As a result, the decision-making environment at the community level to determine climate actions show a little indication that the community can adjust their behaviour to address the changing environment. Gupta et al. (2010) argue that such flexibility behaviour is essential in adaptive behaviour. However, there is an effort from the Municipal Environmental Agency to allow the community's to make improvisation. It is evident from the fact that the government let the community to formulate the 'local climate adaptation plan' freely. This is found to be a potential space to generate the 'room for autonomous change' adaptive capacity. Nevertheless, it is important to be critical. The understanding of climate change impact at the community level is found to be low. As a result, there is no openness towards doubt and uncertainty (Gupta et al., 2010; Duit and Galaz, 2008). Without further intervention from the government to increase the community's understanding loads, even the privilege of deciding climate adaptation actions by the community will not lead to adaptive capacity to perform autonomous change.

For the 'learning capacity' dimension, the adaptive capacity is the ability to learn from experience (Folke et al., 2005). The product of such an ability is to reiterate strategy and improve routines (Gupta et al., 2010). The findings show that Proklim implementation facilitates various routine agendas that entail learning (e.g., *Formapel,* field visits, workshops). The learning entails the agenda to evaluate the community's performance in performing climate actions, reflecting the ability to learn from experience suggested by Folke et al. (2005). However, the analysis reveals that regardless of various learning agenda that already in place, the community still have not achieve the desirable adaptive capacity to improve routines. The tendency of the top-down approach is found out to be the reason that is hampering the community's thoughtfulness to execute something outsides what has been suggested by the government to them. However, the learning environment is found in which the community could transfer knowledge among themselves regarding adaptation projects. Hence, they can learn from each other. No literature

argues that transferring knowledge from one community to another can help them build adaptive capacity. However, it is at least help them to improve their knowledge about adaptation projects. This turns out to be effective in increasing the coverage of CBA implementation in DKI Jakarta Province. Hence, the positive effect of the increasing climate-resilience at the neighbourhood level is still achieved.

The last finding and yet the most important discovery in this study is that the dimensions of adaptive capacity investigated in this study do not act in isolation, i.e., they interact and depend on each other. For example, in this case, MoEF's good 'leaderships' allows space for 'variety' actors at the local level to be involved. Then, the good 'variety' leads to the opportunity for good 'learning,' as the knowledge input from various perspectives provided by the different local actors helps them to comprehend possible solutions on climate-related issues. The same thing happens at the community level. For instance, 'room for autonomous change' needs support from the 'learning capacity' dimension. This study found that the community's ability to experiment and innovate requires their openness towards uncertainty first. Hence, the learning about climate-related risk is needed. For CBA activities, understanding how local agents are innovating, and the enabling factors and constraints to experimentation and the uptake of new ideas is essential (Gogoi et al., 2014). In the Proklim case study, it is evident that these processes have not yet been captured in the design and delivery of development and adaptation interventions facilitated by external actors such as the government.

To conclude the findings section, not all the institutional settings created among the community and local governments interaction lead up in generating adaptive capacity. Accordingly, this shows that even though the CBA implementation insides the Proklim platform is noted to be successful in many sources (Rijhwani and Singh, 2019), this research uncovers some aspects of adaptive capacity that have not achieved in Proklim practice. However, the contribution of the existing adaptive capacity made by the local institutions towards CBA implementation is also noticeable. The next section will clarify this.

8.2. Answering the research question

To continue with the conclusions, now the main research question is answered.

What dimensions of local institutional adaptive capacity created between local government and community levels have contributed to the success of Community-based Adaptation (CBA) Implementation within 'climate-village program' (Proklim) implementation?

This study analysed whether the existing quality of adaptive capacity possessed within institutions can allow and encourage the community to adapt to complex and uncertain climate change impact through CBA practice. From all of the adaptive capacity dimensions investigated in this research, the findings discussed in the previous section show that not entire dimensions resulted in a desirable adaptive capacity state in a way the literature argues. However, the analysis demonstrates that some indications of adaptive capacity are there to some degree and contributes something to the CBA practice within Proklim platform. First thing to note, in line with the adaptive climate governance literature suggest, Proklim adaptation regulation in Indonesia frame adaptation as a local problem that should be addressed through tailor-made solutions. This is promoted through the CBA approach.

The dimension of 'leaderships' is finely provided by the government in which it contributes to the success of mainstreaming CBA into local development policy. In this case study, the leadership is provided with the top-down approach, with the clear policy goals of involving the community for sustainable climate adaptation actions. Mainstreaming CBA through local development policy is proved to be an effective route to bring local actors at the provincial and municipal levels to be involved. The 'variety' dimension of adaptive capacity in the Proklim implementation is evident through the existence of cross-sector agencies collaboration and the involvement of three levels government (i.e., the central government through MoEF, provincial and municipal government). The 'variety' dimension contributes to the generation of multiple solutions of climate adaptation projects from various aspects to be suggested to the community. Meanwhile, the learning capacity at the government level is built predominantly through the monitoring and routine sharing meetings. These activities contribute to the cross and shared dialogue among actors (i.e., among the governmental staffs and the communities). For the governmental group, this learning helps them obtain the scientific information about climate change impact and the community's local knowledge. With this information, the government can come up with suggesting solutions to climate issues faced by the community.

Based on the findings, it is evident that the difficulty lies more heavily in building adaptive capacity at the community level. While the government might use the top-down approach to mainstream/upscale the CBA project into a city-scale program, but the principle of bottom-up approach should still be central. However, this study uncovers that there is a tension between bottom-up and top-down approaches in Proklim implementation. The tension between two approaches is found to impede the community in building their adaptive capacity.

In this case study, it is too early to say that the community's adaptive capacity contributes to their performance in implementing adaptation projects. For example, the institutions' design itself has already provided the 'room for autonomous change,' proved by the community's freedom to decide their local climate adaptation actions. This is a good signal that the institutions have attempted to foster adaptive capacity at the community level. However, significant improvisation is barely performed by the community due to the lack of community awareness and understanding of climate change and uncertainty. Furthermore, the community still view Proklim as a government program with a rigid instrument rather than a community-led approach. This behaviour hamper the adaptive capacity, disabling them to create responsive plans and creating more flexible and context-appropriate climate adaptation projects. In other words, there is no indication found in this case study that the 'room of autonomous change' dimension gives a contribution to CBA practice within Proklim. This finding is alarming, considering that the CBA practice should be 'community-driven' approach where the communities should identify the adaptation needs and priorities. The community has an indication of learning capacity to some degree. It has been able to exchange knowledge in which it turns out to contribute to improving their understanding of the possible climate adaptation projects. But still, the problem of the lack of climate change awareness hamper them to reflect on their adaptation projects so they could not improve their routine to adapt.

To end, both top-down and bottom-up approaches have their advantages and disadvantages for adaptive capacity. In this research, a top-down manner has succeeded in scaling out the CBA, and the adaptation actions are applied in a wider area. Furthermore, a top-down approach potentially

brings broad actors to collaborate. However, this approach may ignore innovative ideas. Meanwhile, the bottom-approach in CBA implementation may generate more significant grassroots movement that is more responsive and context-appropriate. However, there is a risk that is only implemented in an isolated area. Furthermore, CBA may difficult to accelerate the adaptation process because of the lack of authority. Therefore, MoEF took the strategy to mainstream CBA through a top-down approach to accelerate the replication of adaptation projects. The strengths of top-down and bottom-up approaches should be integrated, and the balance between these two approaches should be found, so it allows the institutions to evolve and achieve higher adaptive capacity.

8.3. Implications for planning theory and practice

The case study approach of this study has the benefit in which in-depth and personal information could be gathered and analysed. On the other hand, the drawback is the generalization of this study to determine implications for the planning theory and practice in a broader sense. Nevertheless, the empirical insights merged with the literature review can generate generic lessons. In planning theory, several scholars emphasizing that adaptive capacity is an essential element of long-term adaptation to climate change. What has become clear out from this study is that the quality of adaptive capacity within institutions can improve the CBA practice at the neighbourhood level. Importantly, in the CBA context, local institutions' role should increase the community's adaptive capacity because they are considered a vulnerable group. However, by considering the main findings of the research question in this study, it is found that the difficulty lies heavily in building adaptive capacity at the community level. As such, there are still many rooms for improving CBA practice by strengthening the adaptive capacity at the community level. For planning practice, it is highly advised to better reflect the processes through which practitioners and communities decide how to build adaptive capacity through project activities. For example, further develop a guide to integrating the evaluation and monitoring of adaptive capacity into community-based processes.

8.4. Suggestion for further research

This study did not include the dimension of 'resources' and 'fair governance.' Therefore the first obvious suggestion is to investigate those two dimensions further for the next research. Especially with the findings reveal that each of dimension does not work in isolation, the aspect discussed in the 'resources' and 'fair governance' might potentially contribute to some discovery that can support the argument made in this study. Not to mention the fact that the respondents both from the government and the community mentioned the financial aspect (which belongs to 'resources' dimension) repeatedly makes it more make sense that the further examination on the rests of adaptive capacity dimensions is necessary. While the researcher was entering the analysis step, there is also an indication of power imbalances (which belongs to 'fair governance' dimension) between actors, impeding the learning capacity. This research did not dive into those aspects and thereby left a gap for further research.

The gaps in the data collection process, which did not include the field observation in the villages is allowing further investigation. It is worth researching the extent to which the community's adaptation actions effectively solve the climate issues in their neighbourhood. Lastly, the limitations of this qualitative research approach are the limited village site selection with

different neighbourhoods and social characteristics and physical contexts. More village sample that covers the variety of village's characteristics will enrich the explanation on how adaptive capacity can be made in CBA practice.

9. Personal review of the researcher

If this research was to be conducted again from the beginning, several things would have been executed differently. First, the researcher encountered the difficulty to formulate a theoretical framework. It was challenging to decide on relevant or irrelevant theory. The literature about the adaptive capacity in climate adaptation effort is broad, with various concept which intersect each other. A more thorough selection of theories before the author started to write the theoretical chapter would undoubtedly have helped to create a sharper focus within the research. After determining that the research will focus more on the core of adaptive capacity (which comprise of 4 institutional determinants) it was found that each determinant has many indicators. It is proved to be difficult to adequately assess each of the adaptive capacity institutional determinants due to the lack of definitive operationalizations of each indicator so far. It would have been better if this research narrowed down the institutional determinants focus.

Second, this thesis was written in the time of pandemic, and the researcher facing difficulties in collecting data. If this pandemic was not happening, the village choosing process should consider a location with adaptation actions have been performed more visible towards specific climate-related problem to gain deeper adaptation context. For example, the village near a coastal area which severe from sea abrasion and most impacted by the flood because of the sea level rise phenomenon. Therefore, the community's perspective on the impact of climate change on their wellbeing and livelihood can be probed more. Also, two contrast village characteristics should be selected to represent different social dynamics at the community level. Due to the current condition, the villages were chosen based on the community's approachability and openness to be interviewed online. The selected villages in this research must have participated in Proklim for at least two years and were still active until the time of the interview. Nevertheless, those villages are still considered as a valuable context to execute the investigation in this research. The situation explained in this paper may not be representative for all villages in DKI Jakarta Province. However, the institutional settings created between the local government and the community may be similar.

Third, the investigation of evaluation criteria within the interview process poses specific challenges. The main challenge is linking questions to the study topics with which the interviewer and interviewee shares the same understanding (Partington, 2001). The researcher's comprehension of the phenomena is likely different from those of the interviewee. This issue has been addressed by arranging follow-up questions in the interview to avoid partial understanding due to different viewpoints between the researcher and interviewees. Furthermore, conducting interviews online also has its constraint. Building rapport is essential before conducting interviews, so the interviewees are not disclosed the information (Partington, 2001), especially to the respondents at the community level. Ideally, this is done in a period before conducting interviews. However, due to the present circumstances in which the interview cannot be done face-to-face, building rapport was extremely hard. By considering those challenges, the element of risk always remained.

Fourth, Proklim also includes the component of mitigation, and it is hard and almost impossible to direct the participant's answer for only the adaptation topic. Eventually, the researcher allowed the respondent to talk about the mitigation aspect as well. This is proved to be the right decision because the information about the community's effort on mitigation measures helped the researcher to understand more about the decision-making process made at the community level. However, I found this to be time-consuming for the transcription process, and resulted in enormous qualitative data with irrelevant points.

Overall, I argue that despite the process of performing this research has proven to be challenging, I tried to be critical as possible to my own work. Therefore, I am fully aware of the imperfection and limitation of this research. Nevertheless, I think it safe to declare that I have submitted a proper end product.

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References

Adams, W. C. (2015). Conducting Semi-Structured Interviews. Handbook of Practical Program Evaluation: Fourth Edition, August 2015, 492–505.

Adger, W. N., Brown, K., Fairbrass, J., Jordan, A., Paavola, J., Rosendo, S., & Seyfang, G. (2003). Governance for sustainability: Towards a "thick" analysis of environmental decisionmaking. Environment and Planning A, 35(6), 1095–1110.

Agrawal, A. (2008). The role of local institutions in adaptation to climate change. Paper prepared for the Social Dimension of Climate Change, Social. Development Department, World Bank. Washington, pp. 1- 65.

Albar, I., Emilda, A., Tray, C.S., Sugiatmo., Aminah., & Haska, H [Online]. (2017). Roadmap Kampung Iklim (PROKLIM): Gerakan Nasional Pengendalian Perubahan Iklim Berbasis Masyarakat. Jakarta: Kementrian Lingkungan Hidup dan Kehutanan Direktorat Jenderal Pengendalian Perubahan Iklim. Available from https://books.google.co.id/books/about/Road_map_program_kampung_iklim_proklim.html?id=9JOZtgEACAAJ&redir_esc=y. [Accessed 4 November 2019]

Andersson, K., & Ostrom, E. (2008). Analyzing Decentralized Resource Regimes from a Polycentric Perspective. Policy Sciences, 41(1), 71–93.

Armitage, D. R., Plummer, R., Berkes, F., Arthur, R. I., Charles, A. T., Davidson-Hunt, I. J., Diduck, A. P., Doubleday, N. C., Johnson, D. S., Marschke, M., McConney, P., Pinkerton, E. W., & Wollenberg, E. K. (2009). Adaptive co-management for social-ecological complexity. Frontiers in Ecology and the Environment, 7(2), 95–102.

Arvai, J., Bridge, G., Dolsak, N., Franzese, R., Koontz, T., Luginbuhl, A., Robbins, P., Richards, K., Korfmacher, K. S., Sohngen, B., Tansey, J., & Thompson, A. (2006). Adaptive management of the global climate problem: Bridging the gap between climate research and climate policy. Climatic Change, 78(1), 217–225.

Aytur, S. A., Hecht, J. S., & Kirshen, P. (2015). Aligning Climate Change Adaptation Planning with Adaptive Governance: Lessons from Exeter, NH. Journal of Contemporary Water Research & Education, 155(1), 83–98.

Baker, I., Peterson, A., Brown, G., & McAlpine, C. (2012). Local government response to the impacts of climate change: An evaluation of local climate adaptation plans. Landscape and Urban Planning, 107(2), 127–136.

Bartley, T., Andersson, K., Jagger, P., & Van Laerhoven, F. (2008). The contribution of institutional theories to explaining decentralization of natural resource governance. Society and Natural Resources, 21(2), 160–174.

Baškarada, S. (2014). Qualitative Case Study Guidelines. The Qualitative Report, 19(40), 1–18.

Baxter, P., Susan Jack, & Jack, S. (2008). Qualitative Case Study Methodology: Study Design and Implementation for Novice Researchers. The Qualitative Report Volume, 13(4), 544–559.

Betsill, M., & Bulkeley, H. (2007). Looking back and thinking ahead: A decade of cities and climate change research. Local Environment, 12(5), 447–456.

Biesbroek, G. R., Swart, R. J., Carter, T. R., Cowan, C., Henrichs, T., Mela, H., Morecroft, M. D., & Rey, D. (2010). Europe adapts to climate change: Comparing National Adaptation Strategies. Global Environmental Change, 20(3), 440–450.

Bourne, A., Pasquini, L., Donatti, C., Holden, P., & Scorgie, S. (2017). Strengthening the role of local authorities to support community-based adaptation: The case of South Africa. Enhancing Adaptation to Climate Change in Developing Countries Through Community-Based Adaptation, August, 63–76.

Brunner, R., and A. Lynch. 2010. Adaptive governance and climate change. American Meteorological Society, Boston, Massachusetts, USA.

Buitelaar, E., Lagendijk, A., & Jacobs, W. (2007). A theory of institutional change: Illustrated by Dutch city-provinces and Dutch land policy. Environment and Planning A, 39(4), 891–908.

Carlisle, K., & Gruby, R. L. (2019). Polycentric Systems of Governance: A Theoretical Model for the Commons. Policy Studies Journal, 47(4), 921–946.

Corfee-Morlot, J., Kamal-Chaoui, L., Donovan, M. G., Cochran, I., Robert, A., & Teasdale, P.-J. (2009). Cities, Climate Change and Multilevel Governance. OECD Environmental Working Papers, 125.

Crabtree, B. F., & Miller, W. L. (1999). Doing Qualitative Research. SAGE Publications.

Creswell, J. W. (2014). Research design: qualitative, quantitative, and mixed methods approaches (4th ed). SAGE Publications.

Davoudi, S., Shaw, K., Haider, L. J., Quinlan, A. E., Peterson, G. D., Wilkinson, C., Fünfgeld, H., McEvoy, D., & Porter, L. (2012). Resilience: A Bridging Concept or a Dead End? "Reframing" Resilience: Challenges for Planning Theory and Practice Interacting Traps: Resilience Assessment of a Pasture Management System in Northern Afghanistan Urban Resilience: What Does it Mean in Planning. Planning Theory and Practice, 13(2), 299–333.

Di Gregorio, M., Fatorelli, L., Paavola, J., Locatelli, B., Pramova, E., Nurrochmat, D. R., May, P. H., Brockhaus, M., Sari, I. M., & Kusumadewi, S. D. (2019). Multi-level governance and power in climate change policy networks. Global Environmental Change, 54(August 2018), 64–77.

Duit, A., & Galaz, V. (2008). Governance and complexity - Emerging issues for governance theory. Governance, 21(3), 311–335.

Dumaru, P. (2010). Community-based adaptation: Enhancing community adaptive capacity in Druadrua Island, Fiji. Wiley Interdisciplinary Reviews: Climate Change, 1(5), 751–763.

Edmonds, W. A., & Kennedy, T. D. (2017). An applied guide to research designs: quantitative, qualitative, and mixed methods. SAGE.

Emerson, K., & Gerlak, A. K. (2014). Adaptation in Collaborative Governance Regimes. Environmental Management, 54(4), 768–781.

Engle, N. L. (2011). Adaptive capacity and its assessment. Global Environmental Change, 21(2), 647–656.

Erkens, G., Bucx, T., Dam, R., De Lange, G., & Lambert, J. (2015). Sinking coastal cities. Proceedings of the International Association of Hydrological Sciences, 372(April 2016), 189–198.

Flyvbjerg, B. (2006). Five misunderstandings about case-study research. Qualitative Inquiry, 12(2), 219–245.

Folke, C. (2006). Resilience: The emergence of a perspective for social-ecological systems analyses. Global Environmental Change, 16(3), 253–267.

Folke, C., Hahn, T., Olsson, P., & Norberg, J. (2005). Adaptive Governance of Social-Ecological

Systems. Annual Review of Environment and Resources, 30(1), 441–473.

Forsyth, T. (2013). Community-based adaptation: A review of past and future challenges. Wiley Interdisciplinary Reviews: Climate Change, 4(5), 439–446.

Friedmann, J. (2005). Globalization and the emerging culture of planning. Progress in Planning, 64(3), 183–234.

Gallopín, G. C. (2006). Linkages between vulnerability, resilience, and adaptive capacity. Global Environmental Change, 16(3), 293–303.

Given, L. (2012). The SAGE Encyclopedia of Qualitative Research Methods. The SAGE Encyclopedia of Qualitative Research Methods, 811–812.

Gogoi, E., Dupar, M., Jones, L., Martinez, C., & McNamara, L. (2014). Enablers for delivering community-based adaptation at scale. Climate and Development, *6*(4), 368–371.

González, S., & Healey, P. (2005). A sociological institutionalist approach to the study of innovation in governance capacity. Urban Studies, 42(11), 2055–2069.

Gupta, J., Termeer, C.J.A.M, Klostermann, J.E.M., Meijerink, S., van den Brink, M., Jong, P., Nooteboom, S., & Bergsma, E. (2008). Institutions for climate change: A method to assess the inherent characteristics of institutions to enable the adaptive capacity of society. Vrije Universiteit, Institute for Environmental Studies.

Gupta, J., Bergsma, E., Termeer, C. J. A. M., Biesbroek, G. R., van den Brink, M., Jong, P., Klostermann, J. E. M., Meijerink, S., & Nooteboom, S. (2016). The adaptive capacity of institutions in the spatial planning, water, agriculture and nature sectors in the Netherlands. Mitigation and Adaptation Strategies for Global Change, 21(6), 883–903.

Gupta, J., Termeer, C., Klostermann, J., Meijerink, S., van den Brink, M., Jong, P., Nooteboom, S., & Bergsma, E. (2010). The Adaptive Capacity Wheel: A method to assess the inherent characteristics of institutions to enable the adaptive capacity of society. Environmental Science and Policy, 13(6), 459–471.

Hatfield-Dodds, S., Nelson, R., & Cook, D. (2007). Adaptive governance: An introduction, and implications for public policy. 51st Annual Conference of the Australian Agricultural and Resource Economics Society, 2006(February), 1–13.

Huitema, D., Mostert, E., Egas, W., Moellenkamp, S., Pahl-Wostl, C., & Yalcin, R. (2009). Adaptive water governance: Assessing the institutional prescriptions of adaptive (co-)management from a governance perspective and defining a research agenda. Ecology and Society, 14(1).

Innes, J. E. (1998). Information in Communicative Planning. Journal of the American Planning Association, 64(1), 52–63.

Kahfi, K [Online]. (2020). 'Not ordinary rain': Worst rainfall in over decade causes massive floods in Jakarta. The Jakarta Post, 1 January. Available from https://www.thejakartapost.com/news/2020/01/01/not-ordinary-rain-worst-rainfall-in-over-decade-causes-massive-floods-in-jakarta.html [Accessed 1 August 2020].

Kalibo, H. W., & Medley, K. E. (2007). Participatory resource mapping for adaptive collaborative management at Mt. Kasigau, Kenya. Landscape and Urban Planning, 82(3), 145–158.

Kallio, H., Pietilä, A. M., Johnson, M., & Kangasniemi, M. (2016). Systematic methodological review: developing a framework for a qualitative semi-structured interview guide. Journal of Advanced Nursing, 72(12), 2954–2965.

Khatri, D. B., Bista, R., & Gurung, N. (2013). Climate change Adaptation and Local Institutions: How to Connect Community Groups with Local Government for Adaptation Planning. Journal of Forest and Livelihood, 11(1), 14–28.

Kivimaa, P., Boon, W., Hyysalo, S., & Klerkx, L. (2019). Towards a typology of intermediaries in sustainability transitions: A systematic review and a research agenda. Research Policy, 48(4), 1062–1075.

Leck, H., & Simon, D. (2013). Fostering Multiscalar Collaboration and Co-operation for Effective Governance of Climate Change Adaptation. Urban Studies, 50(6), 1221–1238.

Lee, K., 1993. Compass and Gyroscope: Integrating Science and Politics for the Environment. Island Press, Washington.

Lemos, M. C., & Agrawal, A. (2006). Environmental Governance. Annual Review of Environment and Resources, 31:297-325(1), 297–325.

Mahendro, A.Y., (2017). Analisa Kelembagaan: Pelaksanaan Kegiatan Program Kampung Iklim (PROKLIM) Tahun 2017: Final report. Jakarta: Dinas Lingkungan Hidup Provinsi DKI Jakarta.

Mathias, J. D., Lade, S. J., & Galaz, V. (2017). Multi-level policies and adaptive social networks – A conceptual modeling study for maintaining a polycentric governance system. International Journal of the Commons, 11(1), 220–247.

May, B., 2015. "From informant to actor leader", In O"Brien, K.L., Selboe, E., The adaptive challenge of climate change, Cambridge University Press, pp. 230-251

Measey, M. (2010). Indonesia: A Vulnerable Country in the Face of Climate Change. Global Majority E-Journal, 1(1), 31–45.

Meijerink, S., & Stiller, S. (2013). What kind of leadership do we need for climate adaptation? A framework for analyzing leadership objectives, functions, and tasks in climate change adaptation. Environment and Planning C: Government and Policy, 31(2), 240–256.

Miles, M. B., & Huberman, A. M. (1994). Qualitative data analysis: An expanded source book (2nd ed.). Thousand Oaks, CA: Sage.

Moe, I. R., Farid, M., Kure, S., & Udo, K. (2015). Numerical Simulation of Flooding in Jakarta and Evaluation of a Counter Measure to Mitigate Flood Damage, 71(5), 55–60.

Munaretto, S. & Klostermann, J.E. (2011). Assessing adaptive capacity of institutions to climate change: A comparative case study of the Dutch Wadden Sea and the Venice Lagoon. *Climate law*, *2*(2), 219-250.

Nelson, R., Howden, M., & Smith, M. S. (2008). Using adaptive governance to rethink the way science supports Australian drought policy. Environmental Science and Policy, 11(7), 588–601.

O.Nyumba, T., Wilson, K., Derrick, C. J., & Mukherjee, N. (2018). The use of focus group discussion methodology: Insights from two decades of application in conservation. Methods in Ecology and Evolution, 9(1), 20–32.

Ojwang, L., Rosendo, S., Mwangi, M., Celliers, L., Obura, D., & Muiti, A. (2017). Earth 's Future Special Section: Assessment of Coastal Governance for Climate Change Adaptation in Kenya Earth's Future. Assessment of Coastal Governance for Climate Change Adaptation in Kenya, Earth's Future, 5, 1119–1132.

Ostrom, E. (1996). Crossing the great divide: Coproduction, synergy, and development. World Development, 24(6), 1073–1087.

Partington, G. (2001). Qualitative research interviews: Identifying problems in technique. Issues in Educational Research, 11(2001), 32–44.

Pelling, M., High, C., Dearing, J., & Smith, D. (2008). Shadow spaces for social learning: A relational understanding of adaptive capacity to climate change within organizations. Environment and Planning A, 40(4), 867–884.

Rammel, C., Stagl, S., & Wilfing, H. (2007). Managing complex adaptive systems - A co-evolutionary perspective on natural resource management. Ecological Economics, 63(1), 9–21.

Rashid, Y., Rashid, A., Warraich, M. A., Sabir, S. S., & Waseem, A. (2019). Case Study Method: A Step-by-Step Guide for Business Researchers. International Journal of Qualitative Methods, 18, 1–13.

Reid, H. (2016). Ecosystem- and community-based adaptation: learning from community-based natural resource management. Climate and Development, 8(1), 4–9.

Restemeyer, B., Woltjer, J., & van den Brink, M. (2015). A strategy-based framework for assessing the flood resilience of cities – A Hamburg case study. Planning Theory and Practice, 16(1), 45–62.

Rijhwani, V., & Singh, T [Online]. (2019). Strengthening Community Level Climate Change Adaptation and Mitigation Actions: Indonesia's Climate Village Programme (PROKLIM). Available from: https://www.transparencypartnership.net/system/files/document/200113_GPD_Indonesia_RZ.pdf. [Accessed 20 April 2020]

Santoso, S.I [Online]. (2018). The Implementation Process of Community-based Adaptation Towards Urban Climate Resilience in Indonesia (Master's thesis, Wageningen University, Wageningen, The Netherlands). Retrieved from https://edepot.wur.nl/459836 [Accessed 26 January 2020]

Searle, J. R., & Searle, W. S. (1995). The Construction of Social Reality. Free Press.

Siciliano, G., Turvani, M., & Munaretto, S. (2014). Integrating adaptive governance and participatory multicriteria methods: a framework for climate adaptation governance. Ecology and Society, 19(2), 74.

Stake, R. E. (1995). The art of case study research. Thousand Oaks, CA: Sage.

Stoker, G. (2018). Governance as theory: five propositions. International Social Science Journal,

68(227–228), 15–24.

Termeer, C., Biesbroek, R., & Van Den Brink, M. (2012). Institutions for adaptation to climate change: Comparing National Adaptation strategies in Europe. European Political Science, 11(1), 41–53.

Tierney, K., Bevc, C., & Kuligowski, E. (2006). Metaphors Matter: Disaster Myths, Media Frames, and Their Consequences in Hurricane Katrina. The Annals of the American Academy of Political and Social Science, 604(1), 57–81.

Underdal, A. (2010). Complexity and challenges of long-term environmental governance. Global Environmental Change, 20(3), 386–393.

Urwin, K., & Jordan, A. (2008). Does public policy support or undermine climate change adaptation? Exploring policy interplay across different scales of governance. Global Environmental Change, 18(1), 180–191.

Walker, B., Carpenter, S., Anderies, J., Abel, N., Cumming, G., Janssen, M., Lebel, L., Norberg, J., Peterson, G. D., & Pritchard, R. (2002). Resilience management in social-ecological systems: A working hypothesis for a participatory approach. Conservation Ecology, 6(1): 14.

Yin, R. K. 2003. Case Study Research: Design and Methods, Thousand Oaks, CA, Sage.

Young, O.R. 1999. Governance in World Affairs. Ithaca, NY: Cornell University Press.

Williams, D. S., Rosendo, S., Sadasing, O., & Celliers, L. (2020). Identifying local governance capacity needs for implementing climate change adaptation in Mauritius. Climate Policy, 20(5), 548–562.

Zuidema, C. (2016). Making decentralization work, In C. Zuidema, Post-Contingency: Making sense of decentralization in environmental governance, Stimulating Local Environmental Policy, Oxon and New York: Routledge.

Appendices

Appendix A List of interviewees

A. Semi-structured interview (*via whatsapp call/skype)*

No	Initial/Code	Occupation	Male/Female	Date of interview
1	PRK	Environmental activist / Community's public figure (RW 3, *Makalasari*)	M	02-05-20
2	SRE	Environmental activist (RW 2, *Malakasari)*	F	07-05-20
3	TNR	Director of climate adaptation in the Ministry of Environmental and Forestry	F	06-05-20
4	YDO	Environmental trainer for Proklim	M	11-05-20
5	LTF	The head of PPSM (Community participation development) division, East Jakarta Environmental Agency	F	15-05-20
6	RTU	The staff of PPSM (Community participation development) division, East Jakarta Environmental Agency	F	15-05-20

No	Initial/Code	Occupation	Male/Female	Date of interview
		Notes: Respondent 'RT' was interviewed right after researcher interviewed Respondent 'LTF'. The type of interview for RT is to confirm the information from LTF		
7	AD	The head of PPSM (Community participation development) division, Central Jakarta Environmental Agency	M	19-05-20
8	ADN	Environmental activist (RW 3/*Cempaka putih timur*)	M	20-05-20 and 21-05-20
9	FTH	Staff of PPSM (Community participation development) division, Central Jakarta Environmental Agency	F	10-06-20

B. Focus Group Discussion (Via cisco webex online meeting)

PPSM division - Provincial Environmental Agency, DKI Jakarta Province
Date: 10-05-20

Participants:

No	Initial/Code	Position	Male/Female
1	RT	The head of PPSM	F
2	ER	Staff	M
3	CT	Staff	F
4	HR	Staff	M

Appendix B List of documents

Type	Name of document	Source
Regulation	SK Walikota Kota Administrasi Jakarta Timur No. XX 2019 tentang Penetapan Lokasi Program Kampung Iklim (Proklim) dan Pembinaan serta Pendampingan Lokasi Program Kampung Iklim	Municipal Environmental Agency of East Jakarta
	SK Walikota Kota Administrasi Jakarta Pusat No. 90 Tahun 2019 tentang Penetapan Lokasi Program Kampung Iklim (Proklim) Kota Administrasi Jakarta Pusat	Municipal Environmental Agency of Central Jakarta
Documents/report made by the community at Malakasari village	Village's report on 'Waste Banks' and 'composting' implementation for mitigation measure	SRE
	Village's achievement documentation from 2009-2017	SRE
	Village's report on urban farming implementation	SRE
Documents/report made by the community at Cempaka Putih Timur village	Community's Local Climate Adaptation Plan	YDO
Official Report from Provincial Environmental Agency	Proklim implementation report in 2017	YDO
	Proklim implementation report in 2019	YDO
	Strategy for institutional capacity building for Proklim implementation in DKI Jakarta	YDO

Appendix C Interview Questions

A. Questions for community's member

I. About the village
1. Since when the village of *Malakasari/Cempaka Putih Timur* have joining the 'climate-village program'?
2. Can you describe how the climate change impact has effected your village?
   Probe: Are there any unpredictable event that is caused by the changing climate?
3. Since when your village start performing climate adaptation projects?
4. Why is your village interested in to join the 'climate-village program'?
5. Can you describe the process of registering your village to 'climate-village program'?
6. What kind of activities of climate adaptation projects performed in your village?

   Probe: How do you get the ideas on performing these climate adaptation actions?
   a. Just perform adaptation projects based on the recommendation from the government/Proklim practical guideline
   b. Our original idea
   c. Inspired by the other village that already registered in Proklim platform
   d. Other….

   Probe: Find out how the community can improvise
   a. Referring to the massive flood event in January 2020. What community done in their village in response to such an event?
   b. Is there any climate adaptation projects you propose to the government to be performed in your village?

7. How do you found that these adaptation projects help you to adapt to climate-related events?
8. Is there any forum to share your experimentation to other villages?
9. Are there any improved routines on your climate adaptation projects?

II. Knowing the government's involvement
1. Can you describe what kind of support from the governments you have received?
   Probe: Find out each of three-levels governments support
   a. Support from MoEF
   b. Support from the Provincial Environmental Agency?
   c. Support from Municipal Environmental Agency?
   Probe: How the communities obtain the information regarding the climate adaptation measures?
2. Are there any incentives from the government? In what form?
3. Is there any monitoring agenda, workshop, or training from the government?
   Probe:
   a. Who are involved?
   b. When is the last time such an agenda conducted in your village?

B. Questions for governmental staff

1. About 'Climate-village Program' Proklim

2. Proklim started in 2012, can you describe the development of this program in terms of policymaking and regulation? (Question for MoEF)
3. Since when you are involved in administering Proklim? (Question for Provincial and Municipal Environmental Agency)
4. What is your primary duty in managing Proklim?
5. What government do to increase the number of community participation?
6. Do you have your own protocol and strategy in administering Proklim? (Question for Provincial and Municipal Environmental Agency)
7. What is the difference between the Provincial and Municipal Environmental Agency in administering Proklim?
8. Is there room for improvisation to develop a new strategy at the Provincial/ Municipal level regarding Proklim implementation?
9. Are there any other agencies involved in administering Proklim?
    Probe: If yes,
        a. How the government facilitate flows of ideas within the governmental bodies?
        b. How do you coordinate with each other?
10. Are there any routine meetings to discuss your progress in administering Proklim?
11. What government do to obtain information about climate adaptation projects performed at the community level?
12. Are there any joint activities (e.g., meetings, decision-making, monitoring) that allow you to learn from past experience?