Bachelor's Thesis

Participation of Inhabitants of Flood prone areas.
A case-Study in Semarang, Indonesia.

By Gilles Bierling

Figure 1. View of flooded Neighbourhood Semarang.

Nijmegen School of Management
Radboud University Nijmegen
June 2020

Bachelors Thesis Human Geography, Spatial Planning and Environmental Studies

Gilles Bierling (s4417607)

Radboud University Nijmegen

June 2020

Supervisor: Lothar Smith

Word count: 26.382

Inhoudsopgave

Abstract

Semarang is one of the most flood prone areas of Indonesia. It has seen many decades of flooding, and the forecast is that many more floods will hit the city. A lot of the causes of flooding in the area are out of reach of the population living in the area. These including flooding due to land-subsidence or due to rising sea-levels, only to name a few. However, there might be an element over which the local community might have influence. This element embodies itself in the form of the clogging of (micro-) drainage systems inside the neighbourhoods that are known to be flood prone. What are the causes of the clogging of these drainage-systems? And is there something the local community can do about it? This is what's central in this research. This research was supposed to look into those questions and try to answer the question *'How can inhabitants of the Kemijen area in Semarang be motivated to actively participate in the prevention of future flooding?*

Due to the Corona-virus, it was no longer possible to travel to Semarang and conduct this research in Indonesia. This eliminated the possibility to talk to the people who were living in these areas to hear from them what could motivate them to be more aware about the way they treat their garbage. This meant that the idea of the research had to be transformed into something that could be done without travelling to the other side of the world. Therefore, the decision was made to make this research a little bit more general, without losing its scientific value. This research is now a collection of different aspects of living and working in Indonesia that can be used as guidelines for future research.

Through the interviews, it was still possible to understand the different socio-cultural elements that were of relevance when trying to find new ways of motivating local inhabitants to actively participate in the prevention of flooding. In chapter 5, an elaborate review of the gathered data is given, which highlights several different aspects that this research previously had not thought of.

As a final conclusion to how the inhabitants of Kemijen could be motivated to participate in prevention of future flooding, a two-sided answer came forward. Through what was learned during this research, the idea was formed that a lot of progress could be through proper education of the effects of careless disposal of waste. On the other hand, a large responsibility lies on the shoulder of the local government. It is their task to create a climate in which people have the possibility to share their thoughts on elements as waste management and it is their task to be a role-model by showing, and investing in, the proper way to treat one's garbage.

Chapter 1: Introduction

1.1 Project Framework

Flooding is one of the most recurring problems in Semarang, caused by aspects such as land degradation, rising sea levels, and sometimes poor management (Marfai, 2007, 2008). It is a well-known problem for the inhabitants of Semarang. It's such a recurring problem that some inhabitants experience weekly problems with water entering their homes. Even though these floods may not be so severe, i.e. life threatening as such, they do downgrade the quality of life. Moreover, due to climate change, there is the probability that these floods will grow into much more harmful floods in the years to come. Like Jakarta, Semarang is sinking into the sea (Delinom et al. 2009). In the first decade of this century, the expectation was that the amount of land in Semarang below sea-level (varying from 5 to 200 centimetres) would increase six-fold in a period of just ten years (Marfai, 2008). Reports from the end of this decade have shown us that the amount of land has not increased that much, but are still showing projections of this area doubling over a period of 10 years (Popong, M, 2020). At the same time, the expectation is that the rate at which land drops below sea-level will increase in the coming years. This means that the area of land that is prone to flooding increases each year, and that this land is sinking deeper as well, increasing the damage caused by a flooding. For many inhabitants of Semarang, this will mean that their way of life becomes threatened by the water.

The other part of flooding is caused 'from the inside out'. There are 21 rivers in Semarang, and many of these rivers are prone to flooding during times of heavy rain. The local government has already put a lot of effort in realizing projects that will aid in preventing future floods (Resilient Semarang Handbook, 2016). Examples of these projects are the Flood '*Banjir*' Canals, and the construction of a big dam in the hills of Semarang (Susiatiningsih et al, 2018). This dam has the main function of preventing flooding, but there are more projects on the way, including a Hydro-Power dam that will provide protection and energy (Resilient Semarang Handbook, 2016). One of the biggest two Flood Canals is located in the Western part of Semarang. The other one is located in the Easter part of Semarang. This one is known as the Banger Canal, where Banger is Javanese for 'smelling extremely unpleasant'. The latter is the canal that is of most relevance in this research. Even though the local government has invested heavily in these projects, the rivers' flooding is still a recurring problem for the city. Some aspects of the recurring flooding could be addressed to blockages in the drainage systems of Semarang. These blockings are mainly caused by waste and seem to concentrate in the *Banger* Canal in Eastern Semarang (Ley, 2018). Some of the waste can be small, everyday waste such as plastic wrappers. But there are also bigger pieces of waste that clog the drainage systems, such as washing machines and beds. These bigger pieces of waste were held responsible for a recent flooding of the Banger river in the Kemijen area in 2018 (Jakarta Post, 2018).

There is a possibility that some of the problems could be caused by a different perspective on waste and the flood canals. This different perspective could lead to a different treatment of waste, which could possibly lead to worsening of the situation. Is it that they do not see the downside of their actions? Or is it that they have no other way of disposing their waste? Is there no control by the community? There are two sides to this problem. One side is focussing more on the way garbage is

perceived and treated by the people living in these areas. This is a subject that is worth its own research, since there are so many different sides to this subject. Therefore, this research will focus on the other side of the problem: the actual flooding of the canal. The research will be narrowed down to a specific neighbourhood, the Kemijen area, and a specific part of the problem, the clogging of the (micro-)drainage and what the local community can do to prevent this.

1.1.2 Research aim

The goal of this research is to help create a certain 'base-layer' of knowledge, on which further research can be built. This base-layer consist of combining different aspects of knowledge about flood-management, participation and motivation to create some sort of blueprint for other research to elaborate on. Different important aspects of this research are to create a better insight on how the local inhabitants of the flood-prone areas surrounding the Flood Canals perceive their own role in aiding further prevention of future flooding. This part evolves mainly around the way the local inhabitants treat their waste. The current situation is that a lot of the waste ends up in the flood canal, where it clogs and creates an extra risk of future floods.

Another important aspect is knowing what has to be done to create an additional value of the canal to the inhabitants. It is likely that the inhabitants currently do not feel any responsibility for the canal because they feel that the only value of the canal is to transport water during a flood. Understanding the perception of the inhabitants around the canal can provide valuable insights on which the local government can act. This will help improve the current living situation of those in flood prone areas around the canal. For this to be of value, we first must know more about what creates sense of responsibility, sense of place in a way. The borderline between place and space comes to mind when focussing on this specific situation. Their homes are their place, but the Flood Canal right next to them is perceived as space, as an area which holds no emotional value for the inhabitants. In order to create valid conclusions about the behaviour of the inhabitants, understanding their feeling of Space and Place is of great importance.

1.1.3 Relevance

Scientific Relevance: A lot of research that has been conducted on the water problems cities like Semarang tend to focus on the physical aspects of water problems (Marfai, 2007, Marfai 2008). Many of these research publications are of a descriptive nature, discussing the current situation and how this has arisen (cf. Marfai and King, 2007, Susiatiningsih, 2018). These researches tend to focus more on physical description of the situation in the past, than on the humanistic aspects of prevention in the future. This research will try to fill in that gap. These analytical researches are the foundations on which this research, and other researches in the same field, will be build. Learning from the causes will allow us to act and think about preventing future problems. This research will look into what can be done in the future, rather than to look at wat has caused the current problems (even though you need to understand the *why* to act on the *what's next*).

Societal Relevance: The research will focus on the inhabitants of the Kemijen area and the problems they are facing. The outcome of this research will include some recommendations for the local government and the local community on how they can act to prevent future flooding, and mainly the flooding caused by the clogging of (micro-)drainages. This research might therefore directly aid in improving the living conditions of the inhabitants of the Kemijen area. At the same time, this research will try and provide some general ideas and guidelines on which further research can be built. These general ideas can also be a frame for research in other areas of the planet that also deal

with the same problems. Even though every country, province, and even city has its different cultures and habits, some guidelines might be generally applicable to different cities that are dealing with the same challenges. This research will not be a leading project on citizen participation, but it can be used as a foundational study for follow-up research.

1.1.4 Research Framework:

As with any research, this research will have certain guidelines in order to be able to answer our research aim. These guidelines consist of the research question and the sub-questions.

The main question in this research is:

'How can the inhabitants of the Kemijen area in Semarang be motivated to actively participate in the prevention of future flooding?'

The sub-questions in this research are:

1. *What is the current situation concerning flooding in Semarang?*
2. *What does the local government already do to prevent flooding?*
3. *What does the local community already do to prevent flooding?*
4. *What aspects of Javanese culture influence the generalized conceptions of citizen participation and bottom-up approaches?*

The decision for this specific combination of research- and sub-questions comes from the idea that these four sub-questions are intertwined, complementary and together will aid the best in formulating an answer to the research question. The first sub-question will help with creating a better image of the situation; who are involved, who is in charge, what is the current perception. These are the aspects that will be answered by the first sub-question.

To dive deeper into the description of the situation, and to work on this in order to get to the final recommendations, a clear description of the efforts already made by both government and community is important. These two questions come forward from the first question, and will be more precise on pointing out the current efforts; what are examples of good effort, which areas can be improved upon, what aspects are being overlooked by the involved actors. The final sub-question will have a more technical character. An introduction to the theories of Stakeholder Participation and Governance will be provided in the following chapter. This sub-question will elaborate on those concepts by adding the factor of cultural influence. Understanding the answers to all these questions can show how they are intertwined. In order to understand the full grasp of the influence of culture on different approaches in Stakeholder Participation, we must first understand how the governmental systems in Indonesia works.

Every research is built following the same steps. This research is no different. In order to create a feeling for what is at play, and to create and formulate the backbone of this research, a *Literature Study* was conducted. This study created a better understanding of the broader concepts that will come at play during this research. These concepts included land degradation, flooding, space and place, and Stakeholder participation. The existing literature also helped to narrow down the specific aim of this research into a lesser explored corner of science.

The second part of data consists of more Empirical data. In an ideal situation, the data would be gathered through a combination of interviews and observations. The idea is that previously

researched literature would be used to formulate interview questions through which the research goal would be achieved. For an image that would be as complete as possible, both experts and inhabitants of the Flood Prone Areas would be interviewed. The interviews would be semi-structured, so that there would be a lot of possible space to elaborate on unexpected subjects. The data gathered through interviews would be accompanied by observations in these regions. The idea behind these observations was to see through my own eyes what the situation on the streets really was like. This would eliminate some of the possible interviewer bias and give more validity to the research.

Unfortunately, the recent COVID-19 outbreak forced us to cancel most of our plans. This also put us in a situation where we had to look for new ways of conducting our research. The possibility of visiting the area of research evaporated. This has put some strain on gathering and presenting data in the wished format, but opened other ways of conducting research. It also lead to a rethinking of the subject of this research. With the original idea being that the research would be based on both interaction with the local inhabitants, local government and experts in that area, the research would now be based more on secondary data. This also meant that doing a precise research to what is needed in order to motivate the people would be more difficult.

However, the decision was made to continue with this research, but to alter it slightly. A lot of the research could still be done without actually visiting Semarang. The actual interaction with the inhabitants of Semarang was an important aspect of the original research, and not being able to have this interaction caused the research aim to slightly shift. Where the original idea was that the final result of this research would answer question about how the population can be specifically targeted and motivated to participate in preventing future flooding, the new goal of the research became creating a certain base-layer on which further research could elaborate.

During the course of the research, one of the interviewed experts offered to share parts of his own research. This included a data-set of 27 inhabitants of the Semarang-area which has aided greatly in creating a better understanding of what is important for the local inhabitants. These inhabitants were questioned about different aspects of their lives, such as income, perception of water-problems and view on social problems. Through this data-set, it became easier to look through the eyes of the inhabitants.

Chapter 2: Theory

2.1 Theoretical Framework

In order to fully understand and critically analyse the observations and data gathered from the interviews, it is important to understand and recognize the theories that are important in the field of this research. When we look at the situation in Semarang, there are some important aspects of the situation which need to be investigated thoroughly. The first thing that comes to mind is the actual flooding that Semarang has to deal with. In Chapter 4: Semarang, an elaborate image will be drawn of the area of research. This is the chapter where the problems with flooding will be discussed, and a first explanation of why a city like Semarang is so flood-prone compared to other areas in Indonesia. This chapter will focus solemnly on some of the aspects of relevant theories. The underlying theories that are of relevance in this research are:

- Sense of Space and Place
- Stakeholder Dialogue (with the dialogic change model for stakeholder dialogue)
- Governance and Participation

2.1.1 Creation of feelings of Space and Place

Throughout the different aspects of Human Geography and Spatial Planning, the ideas of Space and Place are some of the most recurring themes. Space and Place are used to describe the difference between a location that has either no meaning or personal meaning to someone. Space is used for an area that does not hold certain emotional affection to someone, where place is used to describe an area which does have emotional meaning for someone. Yi Fu Tuan described it the following way:

*"What begins as undifferentiated space becomes place as we get to know it better and endow it with value. Architects talk about the spatial qualities of place; they can equally well speak of the locational (place) qualities of space. The ideas "space" and "place" require each other for definition. From the security and stability of place we are aware of the openness, freedom, and threat of space, and vice versa. Furthermore, if we think of space as that which allows movement, then place is pause; each pause in movement makes it possible for location to be transformed into place" (*Tuan, 1977)

In his book 'Place, an introduction', Creswell spoke about place as being *'the stable areas where we bind meaning and emotion to'*(Cresswell, 2015). These stable areas can come in all different sizes and shapes. Most commonly, it is your house or the house you grew up in. But supermarkets, bars, and even alleys can also become this place. Generally speaking, positive emotions lead to positive imagination of a place.

According to this description of Space and Place, anywhere can become a Place for someone. The only thing they have to do is spend time there. If you would follow this line of thinking, the Flood Canal could become a place for the inhabitants of the surrounding regions as well, but it looks like this has not happened. The only place they seem to know, is their own house. This is logical, since it is the place where someone feels safe. The preparedness of the inhabitants to invest such great amounts of money in saving that specific piece of land shows that the feeling of place is very strong in these areas (Ley, 2018). At the same time, it seems that there is no affection or feeling of responsibility for the *Banger* Canal next to the neighbourhoods. Even though the problems with the

canal will literally flow into the neighbourhoods next to the canal. The division between these areas that are so close together, but emotionally so far away from each other is, to say the least, remarkable.

Ensuring that the flood canal has an additional value in the lives of the inhabitants of Semarang can help with this area growing from a place to a space. This development can increase the affection people have with the canal, which could cause their behaviour to change. A result of this could be that the way they treat their trash would change, meaning a cleaner canal.

2.1.2 Stakeholder Dialogue

One of the more 'hot' topics when it comes to modern government/governance, is the involvement of all different stakeholders. The idea of modern stakeholder governance arose in the mid 1980's and came from the ideas of R. Edward Freeman. He was one of the first who came with the idea that, in order to achieve solutions to certain problems, stakeholders had to be included in decision making. The first notion of 'stakeholder' can be found in an internal memorandum of the Stanford Research Institute in 1963. However, Freeman was the first who brought the concept of 'stakeholder participation' to a broader public. He described stakeholders as *"any group or individual who is affected by or can affect the achievement of an organization's objectives"* (Freeman, 1984). Throughout the 80's and 90's, Freeman and other scientists came up with three core elements that had to be focussed on when thinking about the stakeholder concept (Freeman et al, 2010). These three elements were mainly oriented at actual businesses, but can be applicable to greater structures, such as city governments and the citizens of that city. The three aspects were the following:

- *The Problem of Value Creation and Trade:* In a rapidly changing and global business context, how is value created and traded?
- *The Problem of the Ethics of Capitalism:* What are the connections between capitalism and ethics?
- *The Problem of Managerial Mindset:* How should managers think about management to:
    - Better create value and,
    - Explicitly connect business and ethics?

Freeman suggested that '*If we adopt as a unit of analysis the relationships between a business and the groups and individuals who can affect or are affected by it, then we have a better chance to deal effectively with these three problems*'. These three questions are questions that can be of great value to anyone who has a function that involves different actors, especially when there's a conflict of interest in play. For a governmental official who has to make a decision involving negative consequences for a specific group, or area, of the population, being able to explain the essence of these three aspects can help to generate more acceptance of that population. This brings us to some of the misconceptions concerning stakeholder participation.

There are multiple examples of criticism when it comes to the ideas of stakeholder participation (excuse for managerial opportunism, stakeholder primarily concerned with financial outputs), but two main forms of criticism are relevant for this case. The first form of criticism is that '*All stakeholders must be treated equally*' (e.g. Gioia, 1999; Marcoux, 2000). The idea of stakeholder participation is not that there is an optimal situation where everyone has an equal say in the decision-making process concerning a specific problem. The idea of stakeholder participation is that as many as possible stakeholders have the chance to be heard in the process of coming to a decision. The essence is not that the opinion of a local inhabitant weighs as heavily as the opinion of one of

the experts tasked with the scientific baseline of the project. It is about knowing what's important to people outside of the process, and giving these people the feeling that they are heard.

Another common critique is the idea that *'Stakeholder theory requires changes to current law'* (e.g. Hendry, 2001; Van Buren, 2001). Even though this is mainly a critique that applies to actual businesses, it can still be applicable to broader 'organisations'. This form of critique circles around the scare that forcefully implementing stakeholder dialogue into a business will be in conflict with how a company is organized. It could, in theory, indeed mean that shareholders will either be more powerful, or lose their power, but then again, this is not the essence of stakeholder participation. This would be the same for a government. It is no more than reasonable that governments and municipalities have to stick to rules and laws. This is the quintessence of what a government is about. But at the same time, it does not mean that there is nothing else than these rules. There is always to create the opportunity to rethink the way decision-making has been done in the past. Either with a first pilot to look at possible opportunities, or with a more drastic change of mindset.

One of the more ground-breaking theories when it comes to citizen participation was provided by Sherry Arnstein in 1969. When talking about citizen participation, she believed that there were three major steps in participation: Nonparticipation, Tokenism, and Citizen Power. In a society where there would be no space for any form of influence by the citizens, she would talk about Manipulation of the people, or therapy. Manipulation is the step where the local government would organize different community committees and would give the people the idea of being able of have influence in their community, while this would actually be used as either propaganda for the government, or sessions where those who showed up would be influenced to think in the way that the government wants them to think, hence the

Figure 2. Arnstein's Ladder

manipulation (Arnstein, 1969). The different steps of this ladder will not be discussed in its entirety. What is most important to understand is that there are several different gradations of citizen participation, with full citizen control at the top. If a local government really tries to involve their citizens in the process of planning, hence involving them as stakeholders, the government has to act on the 4th step of the ladder, and upward. These steps are the steps where the citizens can give their thoughts on the process (consultation), or eventually can be treated as an equal stakeholder (partnership). If the Indonesian government wants to have a successful stakeholder-dialogue, they should aim to involve the citizens on a level where they are taken seriously and where the Indonesian government is willing to listen to the opinions of the citizens.
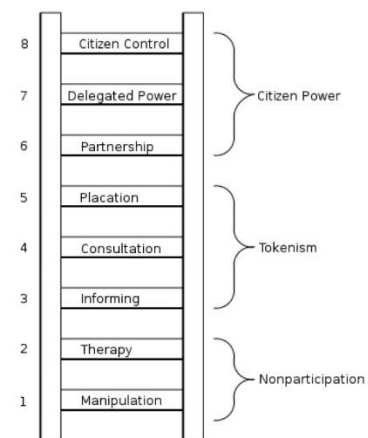
The local government of Semarang already stated that they believe too much decision making had been top down orientated throughout history. In order to achieve their goal, a more bottom-up approach of decision making, it is of great importance that they involve different stakeholders more in the process. Since the *Normalisasi* of the Flood Canals in Semarang in the 1900s (Ley, 2018), the relationship between the local inhabitants and the government has changed. The *Normalisasi* of the Flood Canal refers to the process of rectification of the rivers and canals. The actual goal of this project was to erase crime out of lower Semarang and to clear out the *Kampungs* which were built in lower Semarang. This was all done from a top down perspective, something the local government wants to change now.

Takeuchi et al. see Stakeholder participation as *the* shift from government to governance. They state that "*stakeholders are the individuals and organizations that actively participate in policy-making*

processes and take appropriate responsibilities of implementing the policies that they have agreed to" (Takeuchi, 2019). If one would follow this ideology, a scenario would arise in which the local inhabitants around the Flood Canals would be given a certain level of responsibility in which they can contribute on the aspects they deem important, but are given the burden of managing those processes at the same time. This is already a great step in the direction of a bottom up approach.

2.1.3 Governance and Participation

Next to the Stakeholder dialogue, the participation of the citizens in a specific area is of great importance to coming to a successful cooperation. On the road to the ideal situation of full stakeholder dialogue and participation, some changes in the ways of thinking about, and the solving of certain problems is necessary. The road to a more inclusive way of governing will bring you past ideas such as bottom-up and top-down governance. The *Top-down* approach to decision making is when someone at the top, the director, chairman or governour, decides on what steps will be made. The *Bottom-up* approach centers more on groups of individuals, who together as a community are responsible for, or have at least a great say in, decision making.

In his book '*Modern Governance: Government-society Interactions'* Kooiman illustrated governance as '*a societal quality made up of public as well as private 'governors'' (*Kooiman, 1993). Some of the aspects of Stakeholder Inclusion can be found in this idea, but there is a slight difference between the two. Stakeholder Inclusion tends to focus on (in an optimal situation) including everyone who is affected by a decision. Governance leans more towards the side where there's more some sort of a 'collaborative' situation. Later in his research, Kooiman described governing as

> '*Governing can be considered as the totality of interactions, in which public as well as private actors participate, aimed at solving societal problems or creating societal opportunities; attending to the institutions as contexts for these governing interactions; and establishing a normative foundation for all those activities'* (Kooiman, 2003).

So again, the aspect of all different actors of the community coming together and working towards the best outcome for everyone involved is very present in this definition. This all resonates directly with the ideas of the bottom-up approach. But what factors or conditions are necessary for achieving successful inclusive citizen participation? The The Hague Academy for Local Governance came up with the following 7 conditions (The Hague Academy for Local Governance, 2018):

1. ***Empowered Citizens***: *Citizens who have the skills, knowledge and attitudes to participate, including the ability to organise themselves.* These people are the driving forces of the community. They are willing enough to invest their own time to work towards a situation that will be beneficial to everyone in the community, even though other people are not as willing to participate. The ground-level of skills and knowledge is also an important aspect, and this is something that can be (especially in lesser developed, or poorer, regions) a challenging aspect in finding the right 'motivators'.
2. *Effectively implemented **laws, regulations and policies** that enable participation and social accountability.* This burden of this aspect weighs more heavily on the shoulders of those in charge in a specific region, like the local government. They must be willing to create a 'climate' in which there is room for active participation. Citizen participation has to be embedded in *hard* laws or *soft* regulations.
3. ***Commitment*** *to genuine inclusive participation by the government (political leadership and civil service) and citizens: Willingness to incorporate citizens' needs and suggestions in policy*. Like the point above about being prepared to create laws and regulations, this aspect is also

the burden of the policy-makers. They must be willing to change their mindset in order to let other people in on the decision-making process. This can be a difficult prerequisite, especially in countries where there is a more '*macho-dominated*' culture concerning governing.

4. *The identification, understanding and involvement of all relevant **stakeholders**, particularly marginalised and vulnerable groups.* This aspect returns from the discussed theory of *stakeholder participation* listed above. They again emphasize the importance to include all different stakeholders to get a as full as possible representation of the different people affected by certain decision making.

5. *A **well-planned process** with clear objectives and sufficient allocation of resources (financial and human). The plan and its limitations should be understood by all stakeholders*. The core importance of this point is that the process should be understood by all stakeholders. This means investing time and funds in 'watering down' the precise plans so that everyone, even the non-educated part of the population, can have the chance to understand what is going to happen and how this is going to affect their lives.

6. *A **transparent government**: the publication of understandable and usable information.*A valuable point of action on this point can be given shape in the form of approachable community-meetings. In this way, the concrete piece of education can be brought to even those who stand the furthest away from the actual 'drawing-board'. At the same time, everyone involved has to be able to get insights in the process at any given moment.

7. ***Trust** between government and citizens.* Of all the points listed above, this might be the most important when it comes to inclusive citizen participation in Indonesia. In several of the interviews, this point was presented as the base-layer on which all further contact would be established (p.c., 2020). Since the Indonesian culture and the Western culture are different on a couple of aspects, experts from the west tend to overlook this aspect and not fully understand its importance.

In a society that is known to have a strong hierarchical structure, like Indonesia (Gurney, 2016), it can be harder to implement structures similar to participation as stated above. What is important to keep in mind is that Indonesia knows different structures than most western countries. Coming from a highly centralized state, the country has been shifting more and more towards a more open and involved state. Two important laws, Law No. 22 and Law no. 25, were passed in 1999 and implemented in 2001. These laws helped greatly with the decentralization of the government by handing tasks and responsibilities to more local governments (Beard, 2004). At the same time, Indonesia is known to have very harmonious social structures in terms of cooperation and collaboration. Take the *Musyawarah*, a phenomenon known across the whole of Indonesia, as an example. The *Musyawarah* is a communal gathering most often observed in smaller villages. This gathering is used to ensure that everyone who is affected by a certain decision, no matter how important that person is, can have a say and vote in the decision making (Kawamura, 2011). In essence, this can be seen as the oldest form of Stakeholder participation. Next to the idea of *Musyawarah*, the idea of *Gotong Royong* is very important in Indonesian Culture. The idea of *Gotong* (carrying a burden using your shoulders) *Royong* (community) can be described as the collaborative carrying of burdens. As with the ideas of *Musyawarah*, *Gotong Royong* is a very important aspect of Javanese culture and is one of the most distinct examples of communal work in the world. It is important to make a connection between the modern-day governance as it is understood in the Western culture, and the ideas of cooperation, inclusion and governance as it has been known for

centuries in countries with a different cultural background, like Indonesia. It is almost impossible to take these ideas and try to forcefully implement them in a country like Indonesia. In order to have a successful collaboration, the best of both ideas have to be combined.

2.2 Conceptual Model
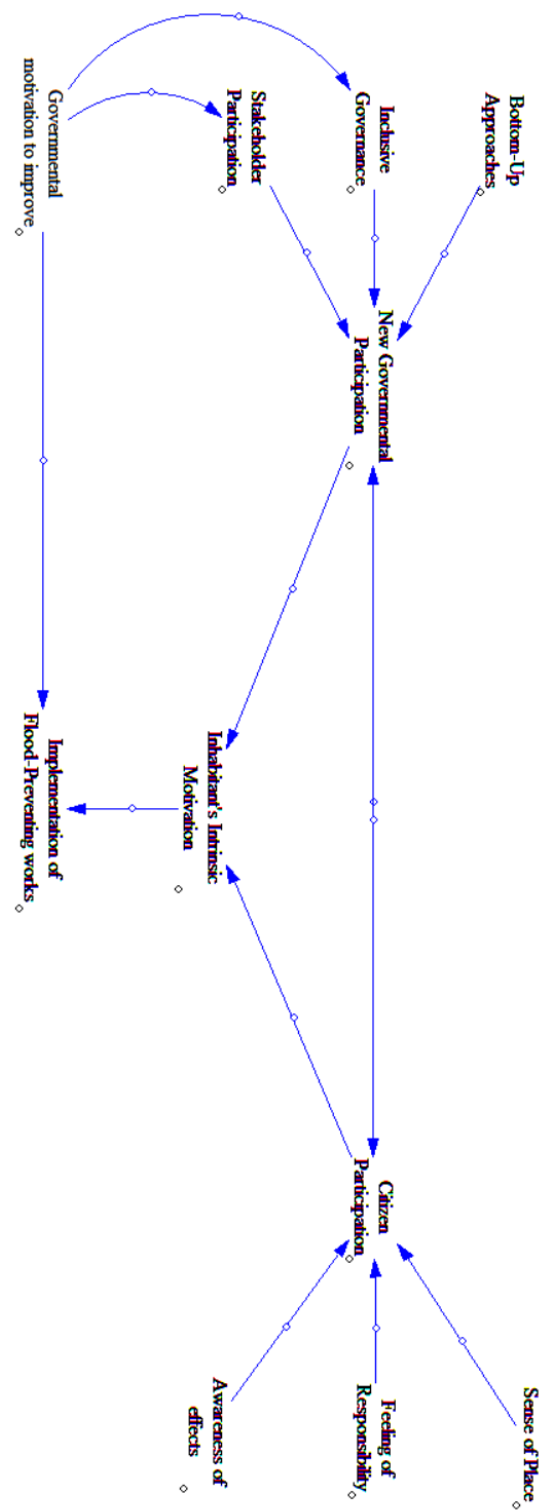
Chapter 3: Methodology

When trying to put this research into specific frames, there are two frames that draw the most attention. These two frames are *Humanistic Geography* and *Spatial Planning*. Humanistic Geography refers to the aspects of geography that mainly concern the human experience in order to understand the relationships that people can have with places and geographical environments (Seamon, Lundberg, 2017). The concepts of space and place are concepts that fit perfectly in the field of Humanistic Geography. The best way to get close to the people and hear about their lived experiences, is by conducting an in-depth empirical study that focuses on a specific case. Having a lot of personal contact with the people in the research area will help create a better understanding of what these people find important and what motivates them.

This research will be an Explorative Case Study. The decision for this research being a Case Study, and not for example a Phenomenological Study, comes from the scaling down of the lens of research. What the goal of this research is, is to try and find ways how inhabitants of a specific area can be motivated to actively participate in preventing future flooding. Therefore, it is important to research a specific phenomenon in its context, rather than to understand the essence of the lived experiences of a group of people, which would be the case in a phenomenological study. Looking at the problems that are currently at play in the research area, and understanding these problems and what has caused them, will open more doors to further prevention of those problems. At the same time, this research will generate knowledge that can be used, maybe in a slightly altered variant, on other cases around the world. There has not been a lot of previous research that has focussed specifically on the inclusion of less richer parts of the population. Since each person perceives the world around him/her in a different way, there is no guarantee that there will be a single set of outcomes. It might very well be that three different options all seem to be valid. Since there is no possibility to determine at the start what the final outcome will be, this research will stick to Exploratory Case Study. Some ground rules can be common, such as rewards being known to increase the willingness to participate. But in most of the cases, different people need different things.

The decision for case study is because there are many different elements that can be important when discussing general, broad, terms like motivation and flooding. To narrow this down to a more doable research, a case study was selected. Larger parts of Semarang, and Indonesia as a whole, are dealing with problems caused by flooding. It is almost impossible to generate a single, universal, affordable approach to dealing with the problems caused by the water. To narrow this big field of research down into more possible parts, a single case was selected. In order to add to the field of motivating people in combination with water problems, a clearly defined region would be necessary. This is why a single neighbourhood has been chosen, Kemijen. Kemijen is one of the many neighbourhoods in Indonesia, and the world, that have been dealing with flooding in the past, present, and most certainly, the future. It is also one of the poorer regions in Semarang, meaning that people will most likely be less intrinsically motivated to give up some of their own time to help with problems that haul no short-term benefits.

In order to get a group of respondents that would be able to shine a light on all different sides to the problems as stated above, respondents from several different backgrounds would be interviewed. Ideally, interviews with experts in water-management, Indonesian governance, leaders of current projects in Semarang, and inhabitants of the flood-prone areas would be conducted. This ensures that the data collected would come from several different points of view, so that the final information and conclusion would consist of a combination of beliefs. This would then lead to the

most complete, all-round conclusion. In addition to this, some semi-structured interviews with inhabitants of Semarang were held by one of the interviewees, who has graciously offered to share his results. This has aided with creating a better understanding of what concerns the local inhabitants, what drives the local inhabitants, and what the local inhabitants feel about the way things are going right now. The decision for the semi-structured interviews came from the thought that the additional information that could possibly be gathered during an interview could be of much greater value than a short and simple yes/no answer. By this, it was possible to elaborate on subjects that came up during the interview, creating a more whole image of different aspects of the interview. Even aspects that were not thought of previously, providing additional insights. This is also why the decision was made to not conduct a survey. Coming from a 'Western' educational background, it is easy to overlook important aspects that are at play when researching a neighbourhood on the other side of the planet. When focussing solemnly on a strict survey, the possibility of learning and elaborating on aspects previously unthought of would have been eliminated.

Finally, due to the COVID-19 outbreak, it was proven impossible to visit the Kemijen area to understand fully what is at play in this neighbourhood. This is why the decision has been made to increase the lens of this research, rising from a specific area, Kemijen, to a greater area that is struggling with flooding, Northern-Semarang. The spirit of this research has also changed with this decision. Where the original idea was that this research would answer direct questions concerning citizen participation and solving food-related problems, this research now aims to be more of a base-layer on which coming researches can be based. The data gathered has been discussed in a more elaborate way than previously estimated, to create a sort of 'encyclopaedia' of different topics. This will make it easier to use this research as guidance for coming theses and other researches. The aspiration is that people will see this research as a manual for their own research, and learn that their approach might have to change when it comes to researching areas on the other side of the planet. This is something that the author of this thesis has learned to understand and hopes that those who will go to Semarang in the coming years can live up to this understanding. The information provided by the interviewees who have been to this neighbourhood, who understand what is at play in this neighbourhood and who know more about how these people think have proven to be of utmost value.

3.1 Research Material

The original idea of this research was that it would be conducted through interviews with experts, interviews with inhabitants and field-observations. For the interviews, a collection of experts on local government, water-management, local inhabitants of the affected areas, and leaders of different civilian initiatives would have been interviewed. Additional data would then be gathered through personal observations, as to eliminate certain elements of possible bias.

Due to the Corona-virus it had proven impossible to visit Indonesia. This required a different approach to this research, since a lot of the data would originally be based on the opinions of those who live in the flood-prone areas. After consultation with my supervisor, the decision was made to continue with this research, but to give it a slightly different point of view. Instead of writing this thesis as a direct research in which a current problem was researched, leading to several recommendations to the local government and ending with a final conclusion, this research would be a research on which further research would be built. This meant that the group of respondents

had to be slightly altered. For this research, six respondents were interviewed in five separate interviews.

The first respondent was Abel Knipping, a young Dutch expert who works for Witteveen+Bos in the Netherlands. His interview proved of great value in the sense that it showed a different point of view on how to approach this area. He had visited Semarang less than a year ago to conduct a small research. Through this interview, other valuable contacts were gained. Abel was able to give insight in the viewpoint of a young researcher in a foreign country. Finally, Abel made his own data available for this research, meaning that an insight in the daily lives of those who live in Indonesia was suddenly available.

The second respondent was Victor Coenen, also working for Witteveen+Bos, an expert when it comes to water-management, especially in South-East Asia. Victor has been living in Indonesia for the past six years and was thus able to give a better insight on a lot of the social and cultural elements that could be a challenge when working in this area. With his Dutch background, he could give a very colourful image of what it was like to be a Dutch researcher in this part of the world. As an inhabitant of Jakarta, he had personally seen flood-related problems in his neighbourhood.

The third respondent was Roy Kraft van Ermel, Pa Roy. He is a Dutch man with Indonesian roots. Pa Roy was able to make a very elaborate explanation of how the Indonesian culture works, and since he understood the Dutch culture perfectly as well, was able to explain where friction could arise. He was able to shine a light on both sides of the way of thinking. Finally, Pa Roy was intensively involved in the creation of the first polder project of Indonesia, the Banger-Polder. He was able to share an amazing amount of information on the different processes that came into play whilst building the Polder.

The fourth respondent was Reza Arlianda, a young Indonesian expert who had studied in the Netherlands and is currently working for an NGO in Sumatra. Reza was able to share a point of view coming from the younger, higher education, part of the Indonesian society. His period in the Netherlands had also helped him understand the dynamics of the 'Western way' of governing, and was able to give a comparison between the two different styles. He, and this is something that I'm very grateful for, was not shy to point out the negative aspects of Indonesian government and society.

The fifth and sixth respondents were Sawarendro and Dedi Waryono. These two gentlemen are Indonesian experts working for Witteveen+Bos in Indonesia. They added a lot of valuable information to this research, as they could shine a light on different sides of the Indonesian society, without judging this. This made it easier to understand the core ways of thinking in the Indonesian style of governing. Next to this, they grew up in Indonesia and could provide more information about aspects such as education.

After conducting these interviews, a word-by-word transcript was made of each interview. These transcripts were then coded using Atlas to make it easier to find recurring themes. The codes were combined in a code-sheet, which can be found at the end of this thesis, and these themes were displayed in Chapter 5: Results. The results were presented using literal quotes from the interviews and are discussed in Chapter 6: Discussion.

An example of how the coding process looks like is provided to the right. On display are several codes that have come to light during the interviews. You can see that some codes have been highlighted multiple times, which indicates the recurrence of some topics during the different interviews.
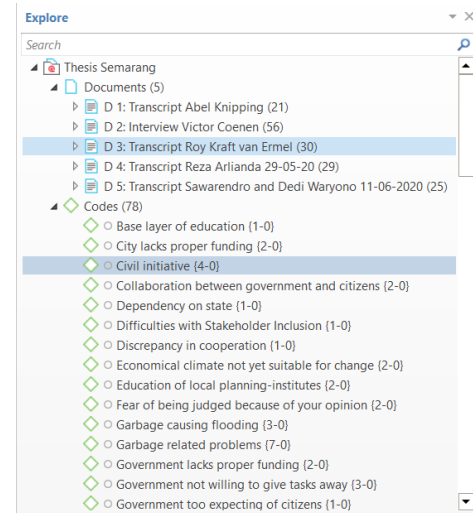

Figure 3. Example of coding process.

Chapter 4: Semarang

In the previous chapters, we have been introduced to the fundaments on which this research will be built. We have discussed the goal and aim of this research, what its relevance is, we have seen the research- and sub-questions. In Chapter 2, some relevant aspects of the theories that came into play during this research have been discussed, and Chapter 3 showed our methodological approach of this research. Before the obtained data is presented in Chapter 5 and discussed in Chapter 6, it is important to know the different physical aspects of Semarang that have created the situation concerning flooding as it is today. This chapter will give an insight in the geographical elements of the city, as well as give a more in-depth presentation of the originally defined area of research, the Kemijen neighbourhood.

4.1 Flooding in Semarang

In order to (fully) understand the different problems that Semarang has to deal with when it comes to flooding, it is important to understand some of the physical aspects that play a role in the water-problems that Semarang has to face. A lot of the problems can be explained using three aspects:
- The geography of Semarang
- Land subsidence in Semarang
- Rising sea-levels in the Java Sea

In the coming paragraphs, these three main topics will be discussed, after which a more in-depth review of the Kemijen neighbourhood will be given.

4.1.1 Semarang and its Geological elements

Semarang is Indonesia's seventh city when it comes to population. Around 1,8 million people live in the city of Semarang, whereas the greater Semarang area contains approximately 6 million people. Semarang is built on the northern coast of the Java island and is known as an important harbour. What is interesting about Semarang is its geological composition. This geological composition automatically explains a great deal of the water-problems that Semarang has to face. Semarang is built at the end of several rivers, making it a delta, and at the bottom of several volcanic slopes. This means that most of the rainwater of the surrounding area will eventually flow through Semarang towards the ocean, making it prone to fluvial flooding. The image to the right gives us an idea of the height of Semarang when a cross-

Figure 4. Cross section of Semarang
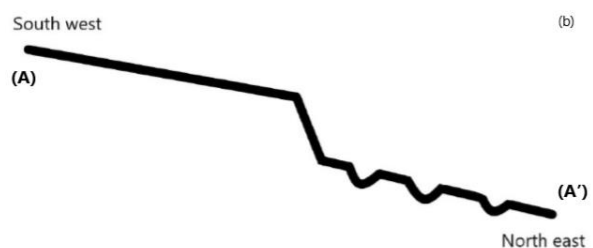
section is made following a line that leads from the South-West (the volcanic/mountain region) to the North-East (where the harbour and the Banger Polder are nowadays). It is clearly visible that the south-western parts of Semarang are located much higher above sea-level than the north-eastern part of Semarang. When looking at the composition of the ground beneath the city, it is clearly

visible that the ground changes its composition the further north-west the line goes.
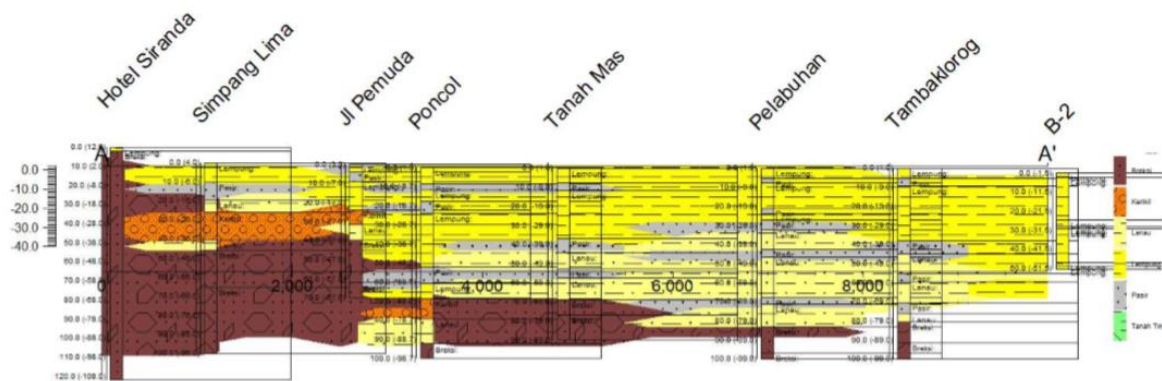

Figure 5. Land composition of Semarang. South-west to North

We can see that the ground in the left of the image, the south-western part of Semarang, consists of a more rock-like structure, and that the ground consists of this kind of rock up to a 100 meters deep. When following the line towards the sea, the soil structure rapidly changes into a composition of no rocks and mainly sand and other soft kinds of ground. This all adds to the fragility of the Semarang region in terms of composition of the ground on which the city is built, and is still expanding.

4.1.2 Land Degradation

A lot of the land degradation is caused by the immense amounts of groundwater needed by the residents of Semarang (Jatmiko, 2018). While the groundwater withdrawal in the 1980s was somewhere around 10 million cubic meters, it had risen to 30 to 35 million cubic meters in the early 2000s (Marfai, 2007). This has put a lot of stress on the ground on which the city has been built. Groundwater ensures a certain amount of pressure from below on the ground above. If too much groundwater is used in a certain area, the 'water table' will eventually drop. The water table is the upper surface of the zone of saturation of the ground. If the water table drops further below the ground, the pressure that is keeping the ground above in place, will drop as well. As of 2002, the water table had already lowered to 20 meters below sea-level (Sofner, 2002). Logically, this had led to subsidence of the ground. In some areas of Semarang, the subsidence between 1980 and 2000 took place at a rate of 10 to 15 centimetre a year (Marfai 2007). There is, however, a positive note to this part of the problem. Recent studies have shown

no	year	number of wells	amount of extraction (m3/year)
1	1990	300	23.000.000
2	1995	320	27.000.000
3	2000	1050	38.000.000
4	2016	unknown	13.064.810
5	2017	unknown	15.507.755
6	2018	unknown	27.665.905
7	2019	unknown	13.801.380

Figure 6. Groundwater extraction in Semarang.

that the past few years have known a water demand half of the demand in 2000 (Popang, 2020). This does not automatically mean that the water table is back at its original level, but it does mean that the stress will not worsen. If this continues, and the water table manages to restore itself, the rate at which land subsides will likely slow down. At the same time, there is no possibility that the land will be pushed back up. The damage that already has been done will stay there.

The image to the right shows the level of land-subsidence that Semarang has to face. You can clearly see the division between the part of Semarang that was built on rock, and the part that is built on softer ground. The most reddish parts are facing a rate of over 10 centimetres a year (as of 2020).

Figure 7. Land degradation in Semarang.

When looking at a close up of the are around the Banger-Polder (mid-right) and the old town (mid-left), we can clearly see that the area around the Banger-Polder is facing extremely high rates of land subsidence, where rates of 6 to 8 centimetres a year are no exception. This map shows us the reality of extreme land-subsiding in Semarang.

Figure 8. Closeup of land degradation in Semarang.

4.1.3 Rising Sea-levels

At the same time, sea-levels around the world are rising. This is mainly due to the rising average temperature of the earth, and will affect almost all parts of the world. However, the islands around the Java Sea in Indonesia seem to be facing a worse future than other parts of the world. A recent research shows that the average increase of the level of the Java Sea during the period of 1993 - 2012 was 5,84 mm each year, almost twice the average global sea-level rise (Kismawardhani, 2018). This means that the Indonesian government has to act quickly in order to protect a lot of its islands. The combination of sinking land and rising water makes the coastal areas of Java increasingly more vulnerable to future flooding. But the floods caused by the Java Sea are not the only floods which concern the citizens of Semarang. This is because the residents of Semarang have to deal with two kinds of flooding:

- Flooding caused by the tides and rising sea-levels.
- Flooding caused by the overflowing of the river.

The flooding caused by tides and rising sea-levels are floods that happen more often, but are less harmful to the flooded areas. These floods mostly come down to a layer of water swept into these areas, flooding houses with a couple of centimetres of water. The main response of the inhabitants of, for example the Kemijen area in northern Semarang, is to raise their houses. This is a very temporary measurement, since the greater Semarang area is still affected by land subsidence, and the sea-level will still rise. The houses will need to be raised again a year later. The inhabitants of these areas are not willing to invest in long term solutions. Their main concern is to keep their feet

dry. In the current situation, some residents have to spend as much as one fifth of their yearly income (Ley, 2018) on improvements on their houses. This is a cycle that repeats itself each year, putting the residents in a hopeless situation.

When looking at how far the Semarang coastline has extended into what used to be sea, one can easier understand why a city like Semarang is heavily hit by the rising sea-levels. In the image to the right, an indication is made of where the original coast line was in 1741, and where the coastline in 2007 was. This map explains two things: it explains the fragility of the area when it comes to rising sea-levels, since a great part of the city is built on what originally was the seabed, and it explains why Semarang is so prone to land-degradation. Sea-bedding is far from being the most solid material in the world, so if a lot of pressure is put on this type of ground, it will easily be pressed together. If this is combined with pumping large amounts of groundwater out below of the city, a simple equation of 1+1=2 can be made.

Figure 9. Growth of Semarang into the sea.

There are multiple sides to this problem, and it is not clear why these problems are so recurring. What we do know is that the residents do not feel a very high level of responsibility for managing their waste properly, so that it won't get stuck in the drainage. At the same time, they feel have felt that the government does not do enough to help them when it comes to flooding (Dewi, 2007). The government, on the other hand, has noticed this and has put up a very elaborate plan on how to make Semarang ready for the future. One of the points they acknowledge, is that they feel that a lot of decision making comes from meetings that are:

- Held too irregularly
- Too top-down

All the topics listed above create a situation around the Flood Canals of Semarang where inhabitants have to deal with land subsidence, rising sea levels, and poor waste management. The combination of these three leads to flooding of the surrounding occupied areas. The government has tried to prevent flooding by creating the Flood Canals, but this has been done from a very 'Top-Down' perspective, where the technical aspects outweighed the emotional aspects of the population. This might have contributed to creating a situation where the inhabitants feel little or no connection with or responsibility for the Flood Canals, worsening the problem.

4.2 Kemijen

To narrow the entire region down into a more compact area of research, a specific region of Semarang has been chosen. Kemijen is a neighbourhood in the north-western part of Semarang and is situated near the Banger-Polder. As we have read in the paragraphs above, this are is prone to land subsidence, rising sea-levels and flooding of the rivers. In 2010, Kemijen had 13.397 inhabitants (Badun Pusat Statistik, 2010), but it is likely that this number has risen since the number of inhabitants of Semarang has risen by roughly 200.000 over a period of 10 years (Popang, 2020). It is one of the poorer regions of Semarang, with 26% of the inhabitants living below the poverty line, and another 64% in danger of poverty (Smits, 2013). The area is known for its recurring floods. The area sees three different kinds of problems that lead to flooding of the area: Land subsidence, rob, and heavy rainfall. The Kemijen neighbourhood is located alongside the Banger-river and is filled with many small canals. This adds to the vulnerability of the neighbourhood.
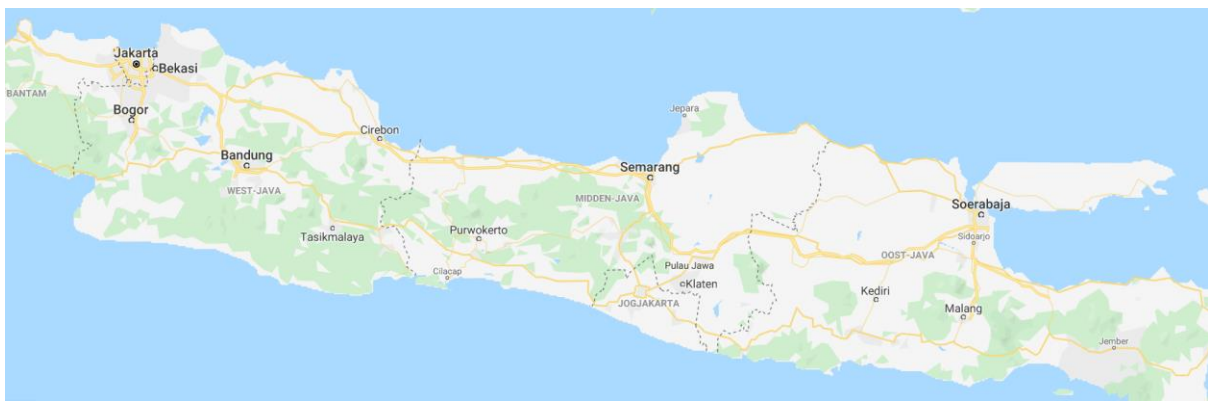
Figure 10. Map of Java.

As is visible in the map above, Semarang is situated on the northern coast in the middle of Java. The Kemijen neighbourhood is located in the north-western part of Semarang, as is visible in the map to the right.

One of the most well-known projects in the area is the Banger-Polder project. This 'polder-pilot' project was started in 2005. The polder, which was built in collaboration with Dutch engineers and was modelled after polders as they're known in the Netherlands, protects 80.000-100.000 inhabitants that live around the Banger river.

Figure 11. Map of Semarang.

(Hoogheemraadschap Schiedam, 2017). One of the interviews was held with one of the creators of the Banger-Polder pilot project, who was able to tell us a lot about the situation before and the situation after the implementation of the Banger-Polder. These results will be displayed in the next chapter.

Chapter 5: Results

In this chapter, the results of the five interviews and the dataset will be discussed. This will be done on the basis of five themes. This will make it easier to compare the different opinions of the respondents with each other. The five themes that will be used are:

- Indonesia
- Local government
- Local community
- Financial elements
- Flood-related elements

The first theme is mainly about what the respondents told about the cultural and social structures of Indonesia. This theme tells us more about the hierarchy in the co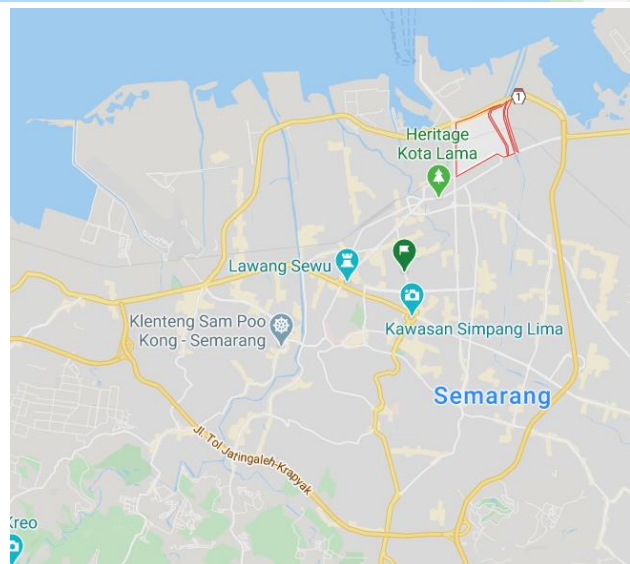untry, what the difference in politics might be compared to the west and what some important, and relevant, aspects of the Indonesian culture are. The second part focusses more on the actual political aspects of the Semarang area. Some of the aspects that will be discussed under this theme are bottom-up governance, stakeholder participation and cooperation. The third theme is about the other aspect of cooperation, namely the local community. Some of the subjects under this theme are the same as with government, but from the viewpoint of the community. Some other themes are motivation, participation and the relation between government and citizens. This is also the theme where the dataset will be most elaborated on. The fourth theme is about the different financial aspects of living in Indonesia, governing in Semarang and funding smaller projects. Finally, the last theme focusses mainly on all different elements that come into play when flooding is discussed. This is where the Banger-Polder, the SEMA and causes of flooding will be discussed.

Three of the five interviews were held in Dutch and are translated to English by the author.

5.1 Indonesia

With every country having its own habits, structures and values, it is no surprise that there are some factors at play in Indonesia that can differ from the way someone might be used to. This is what makes working in the field in a different country such an interesting and valuable experience, but it will unavoidably lead to some difficulties when differences in culture will arise. During the interviews, some aspects of culture in Indonesia were mentioned that might be important factors to keep in mind when researching in Indonesia. This chapter will talk about how the respondents that were interviewed thought about important aspects of culture in Indonesia. A discussion of the results will be provided in the next chapter, Chapter 6.

5.1.1. Structure of Indonesia.

One of the first things that, especially the Dutch respondents, shared, was that '*Indonesia is very structured*' (interview 1, p.2). This was said in the context that every street and every neighbourhood has its own representatives. Those are the ones who will give their opinion about certain matters, especially when those matters might be of sensitive value. Another respondent, Pa

Roy, added to this that these structures have been in Indonesia for many years (interview 3, p.3). He gave the example of certain water-temples that operate following these fixed structures, with the priest at the top, and from him further down certain levels of organisation. This form of structure came forward in another interview, but in this case it was put as a *hierarchical* structure. This respondent stated that '*Indonesia is not a egalitarian society, but a hierarchical society*' (interview 2, p. 13). He stated that this might directly lead to having to change the way you approach a situation. The example in this case was that the bottom-up approach as we know it, and have learned it, in the Netherlands would not work in a country like Indonesia, because Indonesia is a hierarchical society (interview 2, p13.). He told me that, in order to achieve certain goals, you would have to talk to the right people. Another example of the hierarchical structures in Javanese culture that was provided was that '*Children are only allowed now and then to ask their parents something, the parents will tell them what is right. Students are ought to listen to their professor*' (interview 2, p. 14). This respondent also talked about that these hierarchical structures do not mean that reaching bottom-up approaches is impossible in Indonesia (interview 2, p.14), but that it would mean that the way a non-Indonesian policy maker approaches a situation has to keep these structures in mind. This is something that was confirmed by the third respondent (interview 3, p. 3).

5.1.2. Socio-Cultural structures

In order to understand how the political decision-making is different in Indonesia compared to other parts of the world, it is important to understand certain aspects of the socio-cultural structures in Indonesia. One of the main aspects of the Indonesian culture that was named by multiple respondents, was that Indonesia knows a culture of participation; '*Participation is embedded in the Indonesian culture*' (interview 3, p. 5). This respondent talked about two key aspects of participation in Indonesian culture; the *Musyawarah* and the *Gotong Royong*. *Musyawarah* is a traditional decision-making rule that is mainly observed in village meetings. It is based on a consensus way of decision making where every player, big or small, can have the opportunity to express their interests. The tradition of *Musyawarah* is rooted so deeply into Indonesian society that decision making on the parliamentary level still follows this ideology (Kawamura, 2011). The other key aspect in Indonesia culture that was addressed by the respondent was the *Gotong Royong*. In Javanese language, *Gotong* means 'carrying a burden using one's shoulder', and *Royong* means 'together'. The idea of *Gotong Royong* is therefore one of carrying all burdens together, or in other words: '*You're faster alone, but you will get further together* (interview 3, p. 5). The idea of working together returned in another interview, but it was combined with a difficulty. *'In Indonesian tradition, we have to work together. But in the urban area, this is difficult*' (interview 5, p. 4). This respondent confirmed the idea of participation as being of importance in Indonesian culture, but elaborated on it by telling that it is more something of a village and that it is harder to do in urban areas. He said that people would rely more on the government in urban areas, than on their own participation.

A different aspect of Indonesian culture is more linked to the hierarchical structures stated above. This aspect is the fear of not saying what you really think, because you're afraid of the effects. One of the respondents stated that '*we sensed a certain fear that they would be judged based on their opinion*' (interview 1, p. 2). He stated that this was one of the difficulties he and his team ran into whilst interviewing inhabitants of Semarang. He stated that *'you need to earn a lot of trust in order*

to get someone's opinion' and that this is a shame, since he believed that a lot of the valuable opinions can be found coming from those who are at the bottom of the societal ladder.

Next to these structures, another important structure is the concept of *Kelurahan*. The most important idea of *Kelurahan* is that it is the lowest layer of government. Outside of the big cities, it usually consists of multiple smaller villages. In the city, the *Kelurahan* exists of a part of the city or neighbourhood. When inhabitants of Semarang were asked about whether they believed that the government was able to solve the problems in their respective neighbourhoods, a lot of the inhabitants answered that they believed that they believed that the *Kelurahan* was capable of solving those problems. It seems that the amount of trust that the people have in the Kelurahan is of great value, this is something that can be useful when trying to motivate people in the different neighbourhoods.

5.1.3. Political structures

As an elaboration of how the (hierarchical) structures will show themselves is found in the Political structures of Indonesia. An elaborate presentation of the topics surrounding local government can be found in the next sub-chapter, but a beginning will be provided in this chapter. As listed above, the hierarchical structures are present in Indonesia. This can lead to a phenomenon known as 'backdoor-politics', where decision-making is done in a more private setting, rather than in a room with all the different stakeholders, or members of a board. One of the respondents referred multiple times to this kind of politics. He stated that '*Java knows such a very complicated structure, almost all decision making is done behind closed doors*' (interview 2, p. 14). In addition to this, he talked about how '*a lot of the governmental meetings is not meant to discuss a problem, it is meant to inform everyone of a decision that has been made earlier*' (interview 2, p. 14). This, accordingly to the respondent, leads to a different way of policy-making than for example in the Netherlands. It was not a rare occasion that a plan would be turned around without everyone being informed properly about such a change. This could lead to confusion for those who do not understand this culture. He also stated that after years of experience, he now knows that this is the way decision making goes in Indonesia. That certain problems can generate such pressure on those who have to make the decision, that they believe it to be harmful for their own interests (interview 2, p. 14).

5.2 Local Government

In order to be able to analyse, let alone make recommendations to, the local government about the situation surrounding the flood canals in Semarang, it is important to state certain factors that are of importance in the area. This sub-chapter will focus on certain aspects that were addressed by the respondents that are of relevance when it comes to understanding the local government better.

5.2.1. Political growth

It wasn't until December 1948 that Indonesia became independent. What followed were years of building one unified nation consisting of thousands of different islands and cultures. It is no surprise that this has lead to multiple changes in governmental style. Indonesia shifted more from a democratic society to an authoritarian society. After the so called 'Suharto-era', Indonesia shifted back towards the democratic style of government. One of the respondents started the interview by explaining this: '*firstly historically speaking, we are growing from the authority based, from the Suharto-era'* (Interview 4, p. 1). He continued by saying that this means that Indonesia is still finding out how to do democracy in the optimal way, and that '*a lot of things are still the legacy of the previous era'* (interview 4, p. 1). According to him, this meant that a lot of the decision making happened from a very top-down perspective, where the national government would have a plan and that every region would contextualize it to fit in their own district. Another thing that he spoke of when it came to the style of government was that '*since we are developing from an authoritarian state, all the citizens think that, when there's a problem, it's the government's fault'* (interview 4, p. 8). He added to this that people would be reluctant in trying to fix problems themselves and would wait for the government to come with a solution. Something he thought could also be due to the fact that they '*are not developed enough in the private sector to handle things yet'* (interview 4, p 8).

A second respondent added to this by saying that '*In Indonesia, people appoint a major because they expect them to solve their problems and believe that that someone knows how to solve problems'* (interview 2, p. 13). He continued by stating that this leads to continued disappointment, after which the people choose a new leader who promises the same '*magic trick'*. He foresaw that it '*would take a while before the people are politically evolved enough to see through this kind of tricks'* (interview 2, p. 13). He saw some positive changes over the past year and does recognise that the country is growing towards a more evolved kind of democracy. This is not a surprise, according to another respondent. He put this in the context of the implementation of the first water-board of Indonesia, SEMA, which will be discussed in the next sub-chapter. He compared Indonesia to the Netherlands saying that '*You can compare it to the Netherlands in the 1600-1700's, when we did not have municipalities but we had water-boards'* (interview 3, p. 3). He continued by explaining that it is therefore not a surprise that implementing a water-board in Indonesia could therefore be difficult: '*They had to implement a functional democracy in the organization of their state'* (interview 3, p. 3). However, he said, this did not mean that there is no platform for such a water-board, it only takes a different approach than someone might be used to.

5.2.2. Governmental challenges

Something that came forward in multiple interviews was the lack of continuity in the style of governing in Indonesia. Most typical for this phenomenon was something that was said in the fifth interview; '*in the government, the people are only there for three or four years (…) and then there is a new person coming and they do not know about the new mindset and they go back to the old mindset*' (interview 5, p. 2). He said this in the context of the government changing from a style where they want to do everything themselves (top-down) to a more inclusive style of governing (bottom-up). He saw that over the course of a couple of years, someone would more and more be able to give out their tasks to others to create a better collaboration, but then this would be undone by the person who would come into this position after 3 or 4 years, after which this process would start again. He saw this as one of the most important difficulties of why change could go so slow in certain aspects of the government. Another respondent had encountered this kind of difficulty as well. He stated that '*With every change of director, the work of their predecessor would be halted, because this was useless. Why else would that someone be replaced?*' (interview 2, p. 9) was one of the more common ways of thinking about governance in Indonesia. He continued by explaining that whenever A different, more harsh, way of putting this is by saying that 'politicians keep reinventing the wheel'. An example of this was stated by the same respondent: '*In Indonesia, the budget (for certain projects) is revised every single year*' (interview 2, p. 9). This was named as another one of the reasons why projects could easily be spread out over multiple years, instead of finishing it within the time-period that was originally estimated for the project. As a final comment on the continuity of policy in Indonesia, the respondent stated that this is something that happens in a lot of different countries. The Netherlands is one of the few countries where continuity is highly valued on such a scale. It is therefore not a solemnly negative aspect of the Indonesian governmental culture, but something that has to be held in mind when working in Indonesia.

5.2.3. Valuation of Governmental practices

Even though the interviews were not focused on evaluating the way the Indonesian government works, it was as topic that still popped up during the conversations. There were two different sides to the valuation of the way the government works. These will be discussed in the following chapter, but a description of what they were will follow. Logically, a valuation is either positive or negative. Two different respondents pointed out two clear examples of the positive and negative valuation of the government. The first respondent, when asked about collaboration in the Banger-Polder, replied with '*When it comes to policy on collaborations, the government of Semarang is doing a very good job, formidable job actually*' (interview 3, p. 8). He stated that it was no more than acceptable that there are some rough edges when people work together, that this was something inevitable. He believes that if someone is capable of doing something flawless, that person would be '*god-like´,* but that the way the government of Semarang was approaching cooperation was already something that was exceptionally good in its field.

A different sound was heard from another respondent. He stated that some experts who were participating in a board of recommendations to the local government '*are hating the government*

because the government failed to do this or that' (interview 4, p. 4). This respondent talked about a certain feeling of uselessness under those who had been asked to participate in this board. Those experts would have the feeling that their advices and their plans were not taken seriously and that the local government, in the end, would decide to fund other projects (interview 4, p. 5). When asked about the collaboration between government and citizens in the Banger Polder area, his opinion became more harsh. He stated that there was no such thing as good collaboration and that *'the citizens in the northern part of Semarang are treated like an object'* (interview 4, p. 7). He realizes that this is a harsh thing to say, but that he believes that this is in fact the case in northern Semarang. He said that *'the ones who make the decisions and do things and build infrastructure, it's anything but the citizens. They just have to do what they are being told and make a good publication'* (interview 4, p. 7). This view of the way the government does or does not involve citizens in its decision-making gives us a much more negative image. During the conversation, the subject changed to the Banger-Polder. Even though this subject will be discussed in a more elaborate way in the next sub-chapters, this remark was tied to a valuation of the governmental works. His remark on the way the government acts in the Banger-Polder was the following:

'And in the Banger-Polder itself, the ones who are being so busy again is the government. Actually, I don't know what the citizen over there is going to do anyway, they are just helping themselves by making the floor-level higher and higher' (interview 4, p. 7).

It is clear that there are some very divided opinions when it comes to the evaluation of the way the government works. This will be discussed in the following chapter.

5.2.4. Cooperation

As a follow-up to the positive and the negative valuation of the way the government works, the way the cooperation between government and citizens is mentioned by the respondents will be talked about. One of the most distinct references to a successful cooperation between government and citizens was when one of the respondents was asked about SEMA, the institute that is responsible for the Banger-Polder. The respondent who was asked about this replied with an explanation of what the SEMA was. He told that it was a collaboration of the local government, the national government, the citizens and several businesses, making it a public-private cooperation (interview 3, p. 1). He went on to say that it was a successful cooperation, especially when you keep in mind that Indonesia only has had 8,5 years of experience with the creation of such a water-board. When compared to the Netherlands, who have had 815 years of experience, this makes it an ever bigger treat of the Indonesian government (interview 3, p. 1). This information was carried on to another interview, where the respondents added that *'It would be good if there is some consensus that the small drain* (of the Polder system) *will be handled by the local community, and the large drain by the local government* (interview 5, p. 2). This respondent believed that the cooperation would be optimal if it would exist of small initiatives carried out by the local community, with the bigger elements such as maintenance and funding would still be the responsibility of the central government. He also warned that *'It would not be wise to stop the participation of the local people'* (interview 5, p. 2) as this would lead to increased pressure on those projects.

Later during this interview, the same respondent stated that *'It is difficult for the government that the task will be handed over to the people'* (interview 5, p. 2). He believes that some of this could be

caused by the fact that the government still funds these kinds of projects and that this is one of the reasons they are a bit reserved when it comes to giving the responsibility to someone who is not working for the local government. This idea was confirmed by a second respondent during their interview. This respondent gave the example of a local *Kampung* who was fed up with the continued problems caused by flooding, that they decided to build their own water-management systems. This *Kampung* created a kind of polder-system that was completely under their own management. He told me that '*The government is not excited at all about the people deciding to take matters in their own hands*' (interview 2, p. 5). He believed that this is also caused by the hierarchical structures that Indonesia knows, which is something that will be discussed in the next chapter.

A final example of cooperation, or rather of missing out on cooperation, was provided by a third respondent. He explained that there were some fixed mechanisms that would lead to a better implementation of the public. An example of one of these mechanisms is the *Musyawarah*, the system where communal decision-making would lead to the most optimal outcome for all those involved. Accordingly, there was a legal rule that would force the government to instigate such a meeting at least once a year, but that it was not very successful on a city level. At the same time, he said that the *Kelurahan*, the neighbourhoods, had their own mechanisms to engage citizen participation, but that the two mechanisms hardly met (interview 4, p. 3). It seems that this is an area where there might be room for improvement. We will look further into this in the coming chapter.

5.2.5. Stakeholder participation

An important aspect of cooperation is stakeholder participation. The concept of stakeholder participation has been explained earlier in this thesis. The importance of stakeholder participation was mentioned in the beginning of the third interview '*It is about connecting, and connection leads to cooperation. This is very important in the Indonesian culture*' (interview 3, p. 3). This respondent listed the element of human interaction as one of the most important subjects when someone would start an organisation in Indonesia (interview 3, p.3). It seems that stakeholder participation is indeed one of the more profound elements of the Indonesian way of governing, as it was mentioned by another respondent as well: '*what we do is, we make a study (…) and then all the stakeholders will be invited and then we will discuss and try to get input from all the stakeholders and try to improve the recommendation for the government*' (interview 5, p. 3). This respondent saw this way of improving a research as the best way to get the most valuable opinions of those who are involved. Even though this way of governing is perceived as the most valuable, or the most grounded in Indonesian culture, another respondent saw more difficulties when stakeholder participation was discussed. He believed that '*It is not working anymore, because it is very hard to organise these events*' (interview 4, p. 3). He believed that a part of this is coming from civilians lacking interest, because '*They always follow the major of the city, since the major was deliberately chosen by the public. So they only do what the major tells to do*' (interview 4, p. 3). It seems that even when the local government tries to follow a more Stakeholder inclusive line of governing, the people lack the interest to actively participate in these events. Something that is very interesting to this thesis.

5.2.6. Bottom-up governance

Combined to the elements of stakeholder participation are the elements of bottom-up governance. Like stakeholder participation, the broader theory of bottom-up governance has been explained earlier in this thesis. This element of the local government is closely intertwined with the elements of the political growth of Indonesia and some elements of stakeholder inclusion. Still, there were some subtle differences which lead to the creation of a separated paragraph specifically about bottom-up governance. It was stated before that cooperation and inclusion is an important element of the Indonesian culture. One of the respondents explained that, even though the local government legally has to do one of the *Musyawarahs* at least once a year, he believed that it is becoming increasingly more important for politicians to embed a bottom-up approach in their political aspirations (interview 4, p. 9). A second respondent added that he believes Indonesia has more of a bottom-up culture than the Netherlands, stating that '*I think that the Netherlands is more top-down than bottom-up'* (interview 3, p5). These elements all point towards bottom-up being of importance in Indonesian governmental styles, but there are also less positive sounds.

One of the respondents believed that some of the bottom-up approach might not really be that much of a real bottom-up approach. He talked about how there is a board of recommendations for the local government, which consists of professors, experts, and other highly placed individuals, but that this still does not mean that one can speak of a bottom-up approach (interview 4, p. 3). A third respondent confirmed this as he said that *'Top-down is just easier than bottom-up'* (interview 2, p. 13). He did not believe that this was due to a lack of motivation, where the government had no intention of creating a more bottom-up climate, he addressed this to the strong hierarchical character of the Indonesian society, something that was mentioned earlier.

5.2.7. Social Capital

Something that was mentioned by multiple respondents earlier in this research, is the importance of Social Capital. All of the respondents mentioned the importance of social capital when you are working in Indonesia: '*you have to earn trust to get someone's true opinion'* (interview 1, p. 3), '*participation is that you know someone who knows the major and you will press that someone into talking to the major'* (interview 2, p. 12), *'it's true in a way, since the money itself is really hard to get, you need a lot of capital'* (interview 4, p. 9). These are just some of the examples of respondents mentioning the importance of social capital. Every interview lead to a conversation about social capital. This was either on a scale of where people would not give their true opinion about something if they did not trust you (interview 1) to a larger scale where it would be important to know those at the top in order to get something done (interview 2 and 3). The third respondent even stated social capital as the most important thing to have when you are planning to start something like a water-board. He stated that '*you need access to the top. To the city council (…) and you need to convince them of the importance of such a board'* (interview 3, p. 3). Later during the interview, he continued on this topic by saying that '*policy is important, but it's something that can be done on paper. In practice, you need to earn the trust of the people'* (interview 3, p. 4). It is very interesting to see that the topic of social capital is something that is so highly valued by all

respondents and that social capital almost seems to transcend the fixed boundaries of governing. During the second interview, it was stated that '*You will use influencers in the local government to reach your goal*' (interview 2, p. 12). This is an indication of social capital being more important than following the standard pathways, like countries as the Netherlands tend to do more. When talking about differences in culture, this can be seen as one of the major differences that is important to understand when you want to do research in Indonesia. The fifth respondent confirmed this by saying that '*If you know the people there* (local government) *it is very easy to discuss it. But if you don't know him or her, it is much more difficult*' (interview 5, p. 3). We will discuss the different elements of Social Capital and how these elements play a role in decision-making processes elaborately in the following chapter.

5.2.8. Education

An important aspect of bringing development into certain areas is education. Without education, there can almost be no growth. It was relevant to know whether or not there was a certain base-layer of education in Indonesia, and to know to what extent this education would go. During the fifth interview, it was stated that everyone until junior high school (age 14) would receive free education (interview 5, p. 6). This could mean that the following generations could all be provided with the same education when it comes to flooding, waste management and theories like stakeholder participation and bottom-up governance. One of the other respondents believed that this was the area where the most could be learned; '*Specific education about participation, democracy, policies (…) because nowadays in the graduate level, only maybe 20% knows about it. It's still really a long run there*' (interview 4, p. 9). These two examples of mentioned importance of education were both focussing more on the civil side of education, but another respondent mentioned education of local planning-institutes; '*It is necessary to have more education of the local planning-institutes. But it is complex to understand and change the current patterns*' (interview 1, p. 8). What comes forward from this passage is that it is a known fact that there is a lot of room for improvement when it comes to educating different layers of the society, but that it will take time and determination to understand, and eventually alter, the existing social constructs in which the people have been living for decades, something that was mentioned earlier.

5.3 Local Community

During the previous two sub-chapters, the opinions of the respondents about the cultural background of Indonesia and the local government have been displayed. But in order to find ways to make the local inhabitants of the flood prone areas in Kemijen actively participate more in the prevention of future flooding, we have to take a look at the Local community itself as well. In the coming sub-chapter, some aspects of importance surrounding the local community will be discussed.

5.3.1. Relation citizen-government

Before we venture deeper into the priorities of the local community, what motivates them and on which ways they participate in the community, we firstly look at the relation between citizens and the government as it has been stated by the respondents. In the previous paragraphs, a light was shed on how the actions of the government were perceived and how the government treated the community in certain situations. To understand the dynamic of this relation better, some of the respondents were asked about the relation between the citizens and the government, seen from the side of the citizens.

Previously, we have seen that in some cases the civilians tend to follow the decisions of the major (almost) blindly. They *'would believe that the major is there to solve all their problems'* (interview 2, p. 13) or that *'they would only do what the major tells them to do'* (interview 4, p. 3). But there's also an indication of a lack of trust in the local government (interview 1, p. 5). This was also something that came forward from the dataset in which 27 inhabitants of the Greater Semarang area were asked about different topics in their lives. Out of these 27 respondents, 7 answered that they did not believe that the government is fully capable of handling the social problems that they encounter in their neighbourhoods. 6 other answered that they believed in the *Kelurahan* to solve these problems, rather than the local government.

5.3.2. Participation

One of the topics that was also spoken about during the interviews, was the grade and the different ways of civil participation. Several examples of civil initiative were mentioned during some of the interviews. These go from early warning systems to prevent further damage caused by the flooding of a river (interview 2, p. 5) to entire polder-like systems where citizens have built and maintain their own polder systems (interview 2, p. 5). A different aspect of participation was mentioned by the fifth respondent, who said that '*The people want to contribute in the local community for the funding themselves, to mitigate the impact of the funding'* (interview 5, p.1). This adds a financial aspect to the reason why the community wants to be involved in certain aspects of governance in their neighbourhoods. This might be linked to the factor stated in the paragraph above, the lack of trust in the local government, but we will discuss this in the next chapter.

The second respondent added to the theme of participation that '*it is already happening, but not in the way that we are used to'* (interview 2, p. 12). He then continued to explain that participation is more commonly seen in the way of people knowing people in high places, which can help them reach their personal goals. This is something that has been discussed in the previous paragraph as well. Participation in the Netherlands is, according to the respondent, very well documented, structured and usually includes several group-meetings. The participation in Indonesia is not as structured as in the Netherlands, but it is no less present.

5.3.3. Priorities

Every person prioritizes different aspects of their lives over others. Still, it's important to know where the decision for prioritizing certain aspects over others comes from, and how this can be influenced. These priorities can be expressed in many different forms; own welfare, waste management and investments are just some examples of this. These three are the expressions that were mentioned most as well. When combining money and motivation to alter your behaviour, one of the respondents gave the example that '*Maybe if it's impacting your general environment, but a lot of people think about that it is not their business, it's not their problem*' (interview 4, p. 10). He continued by explaining that for a lot of Indonesians the case is that '*if they're engaged in a business way, they will come. But if it is for general wellbeing, it's hard*' (interview 4, p. 10). Apparently, money is a large priority for many inhabitants of Indonesia. This is visible in another remark that was made by one of the respondents. This respondent stated that a lot of the project-developers are not excited about spending money that they have earned with the development of large scale problems on solving, or aiding, in the water-problems that Semarang has to face (interview 2, p. 4), even though some of these water problems are, in fact, caused by these large scale land development projects. But that is something we will talk about later.

5.3.4. Motivation

We've seen that money can be one of the priorities of the inhabitants of Semarang. This means it can also be used as a motivational asset for the inhabitants of Semarang. '*For example for the waste, if we can give them extra income, they are willing to do* (take care of) *that. If not, it is difficult*' (interview 5, p. 6). This can also be linked to some remarks made by the first respondent, who told us about his own experience when trying to organise a focus-group in the area. He experienced '*people simply not wanting to participate, or they did not have enough time, or they wanted to be compensated for it*' (interview 1, p. 3). From his remarks, we can make up two different possibilities causing people not wanting to be there: a monetary one (*they wanted to be compensated*) or a personal one (*they did not have enough time*). The second element might be linked to something we have seen earlier, the people being afraid to share their real thoughts in fear of being judged based on their opinion. This is something we will discuss later. Our fourth respondent also told about people simply not wanting to participate in those kind of meetings; '*In reality not everyone wants to participate, so it is like the political opportunity for the citizen itself*' (interview 4, p. 5). This was said in the context of the yearly gatherings organised by the government, in which the citizens can have the chance to say what is important to them and what they think of current plans. Our respondent seems to believe that the lack of motivation can be found in the nature of the meeting, that it is too political. He believes that the people are just not that motivated in politics to go to those meetings themselves. This is linked to something he stated later in the interview where he spoke about the way the government informed the local inhabitants about upcoming plans; '*But it is not a general meeting that people will understand about it, it is just a publication*' (interview 4, p. 9).

5.3.5. Responsibility

Flooding and garbage seem to be connected to each other in certain urban areas in Semarang. The last sub-chapter will focus on the physical aspects of flooding, including the role garbage plays according to the respondents. This paragraph will tell more about the vision of the respondents on the social aspects of garbage, specifically the lack of feeling of responsibility for garbage. Our second respondent spoke about garbage as a problem that '*Nobody feels responsible for. The people don't know what it* (the way they treat their garbage) *causes, and the people believe it is a problem of the city, and not of the population*' (interview 2, p. 7). He goes on to explain that a lot of these people have no other option than to carelessly dispose of their waste. The river is the perfect option for this, since '*it is a 24/7 free garbage collector*'. As final addition, he talked about the limitation of the service-area of the garbage collection. This limited itself to the old city, the touristic eyecatcher, meaning that those who live outside of the city centre have to take care of their waste themselves. Our fifth respondent specified the kind of waste as '*coming from a household. Like on a market, they just throw their trash away without thinking*' (interview 5, p. 4). When asked about why the people would decide to throw their trash into the river, his response was that '*they care less about the problem*' (interview 5, p.4). This respondent recognised the (structural) problems when it came to the way a large part of the Indonesian people treat their waste. He did believe that a combination of education and better facilitating could lead to an improvement in the way people would handle their trash, which might eventually lead to less garbage related water problems.

5.3.6. Awareness

Another important aspect that one has to keep in mind when trying to improve the participation of the local community, is whether the community is aware of the elements that you have designated as problem. There is a very real possibility that something you have decided is a problem is not felt as a problem at all by the local community. Aside from some mentions in the interviews, there was no further in depth conversation of this topic. This is where the dataset of inhabitants of Semarang proved to be useful. When asked what the people knew about the water-problems in Semarang, some answered that they saw that it was littered, that it was dirty, or that it could use improvement. Another part of the inhabitants answered that they did not believe there were problems with the water since '*the water of the well is still clean*'. This is an important indication that defines whether or not people see something as a problem. As long as it does not affect their personal lives, they do not see a problem.

5.4 Financial aspects

Even when both the government and the local community would have set their priorities to reach the same goal, a lot depends on the availability, and the proper distribution, of the financial assets that are available. This next sub-chapter will give an insight in the way the different respondents thought about the availability and distribution of the financial assets in Semarang and Indonesia as a whole.

5.4.1. Funding

Without proper funding, it is hard to complete any projects at all. This is why the subject of funding was mentioned multiple times during the different interviews. As with the valuation of governmental works, this story knows two different sides. A positive and a negative one. Both of these elements were mentioned in different interviews, which gives us a good base-layer for the discussion of funding that will follow. It is certain that Semarang, and the different Kelurahans in Semarang, receive funding. Either governmental funding, or funding from the city. This was stated by one of the respondents; '*there is funding for village, it is actually really big money and is given all over Indonesia*' (interview 4, p. 6). This indicates that the national government of Indonesia is investing sums of money into the villages in order to provide them with some of the necessary financial assets. Not only the small villages are provided with governmental funding, the same goes for bigger cities like Semarang. In fact, '*Semarang is one of the cities that receives relatively large amounts of governmental funding*' (interview 2, p. 5). This is another indicator of the preparedness of the Indonesian government to invest in cities, but, as we have read in the previous sub-chapters, it is not always a certainty that the funding will end up in the places where everyone thinks it is of best use.

Despite the structural funding that different areas of Indonesia receive, there are also sounds that indicate that the amounts of funding are not yet sufficient. One of the respondents replied rather directly that '*They* (the national government) *don't have the budget to manage all the water-problems*' (interview 5, p. 2). He elaborate on this statement by saying that the situation in Semarang has improved greatly over the past 15 years. He saw this most profoundly in several sea-projects that have been carried out over this period of time, but he worried about the sustainability.

     '*At the moment this budget is from the local government and the support of the central government, but if the central government changes their mindset also, they allocate the budget for another city or another region, then it will be different*' (interview 5, p. 2).

A second respondent also spoke about the city not having enough funding, but this was from an angle where the city itself did not generate enough income to independently finance the different projects in the city, and thus needing additional funding from the central government (interview 2, p. 5).

5.4.2. Financial priorities

Funding without proper distribution of funding will still lead to a sub-optimal approach of different projects. This is why several respondents were asked about what the financial priorities in Semarang were. Our second respondent had a clear answer to this question; *'There are only a few long-term agreements that are actually financed over a longer period of time. In Indonesia, the entire budget is revised yearly'* (interview 2, p. 9). This indicates that there is no substantial long-term investment strategy, which might lead to a feeling of uncertainty under project-developers and inhabitants. He gave the example that a certain dyke-project could be halted for a year because they decided to distribute that money to something else for that year. This respondent also understood, up to a certain degree, why this was the way financial strategies were dealt with in Indonesia; '*It is much more fun as a major to have 80% of your budget available each year than just 20%'* (interview 2, p. 9). He saw this as something human that was not essentially bad, but as something that could lead to a lot of delay in the completion of big projects.

5.4.3. Economic climate

An interesting aspect of the economic climate in Indonesia was highlighted by one of the respondents. When the conversation went to the topic of whose responsibility it was to fix certain problems, either the government or the private sector, he stated that the private sector was not yet developed enough to be of substantial impact. When asked whether he thought this was something that would change in the coming years, his response was; *'yes, but maybe one generation. Because the economy over here is really hard to do that'* (interview 4, p. 8). He explained that he saw a lot of people who were very focussed on earning a lot of money, and putting this above things like participating in social works. He said that people had asked him '*Why are you doing social works? Go to the mining company or bigger corporation, multinational corporation, to have better money'* (interview 4, p.8). This is also an indication of how parts of the Indonesian society are very focussed on earning money, and are willing to put this above communal goods. We will elaborate on this in the following chapter.

5.4.4. Poverty

When discussing new, or improved, ways of motivating the local community in countries like Indonesia, poverty is an element of the society that will inevitably come into play. The area of research in this thesis was originally the Kemijen neighbourhood, one of the poorer regions of Semarang and adjacent to the Banger-Polder area. When one of the respondents in the fifth interview was asked about the situation in the Banger-Polder area, he stated that '*More than 50% of the people there are* (living) *below the poverty line*' (interview 5, p. 1). This is an indication of how serious the situation concerning poverty is, and this also gives us an early indication that implementation of new methods will most likely face certain challenges. Another indication of

poverty came up later in this same interview. Our respondent explained that, for many Indonesians, '*eating and living is still their priority*' (interview 5, p. 5). This was as an answer on whether or not the majority of the Indonesian people had proper waste management as one of their main concerns. This subject is closely linked to the paragraph of priorities that was discussed above, and the subject of poverty will be elaborated on in the coming chapter.

In the questionnaire that was held under the population of Semarang, another interesting aspect came forward. Everyone, except one, answered the question '*are there people in social need in your community?*' with a clear yes. This is an indication that a lot of people are at risk of falling out of the community, be it by financial or social aspects. It shows the fragility of parts of society in Semarang.

5.5 Flood related elements

In the previous sub-chapters, the different elements that are of relevance have been discussed: the Indonesian culture, the Governmental aspects, the Social aspects, and the Financial aspects. This last sub-chapter will focus on the subject that finds a place in the core of many of these elements and problems: Flooding. Without the actual flooding, this, and many other, researches would never have been written. In the next chapter, all these elements will be combined and discussed, but as a final wrap-up of the different interviews, the elements of flooding that were spoken about will be discussed in the coming sub-chapter.

5.5.1. Actual flooding

There are many different aspects that lead to flooding, and many different things that can be done to reduce the threat of flooding. In order to state that flooding is actually a relevant problem, this paragraph will show some of the cases where flooding was mentioned as a problem, not only for Semarang but for the whole of Indonesia. During the first interview, it was confirmed that not only Semarang, but '*in whole of Indonesia in the big cities*' (interview 1, p. 1), the threats of flooding were real. When asked about the frequency of those floods, one of the respondents stated that '*Semarang is quite often*' (interview 5, p. 7). He said that two days prior to the interview, Semarang was hit by a flood. He did not think that it was a severe flooding, but it is another indication of how recurring this problem is. An interesting addition that was made by this respondent, was that he believed that flooding caused by rain was less of a problem in Semarang than in Jakarta, but that '*for the flooding of the sea that is* (in) *Semarang more problem than Jakarta*' (interview 5, p. 7). This might make one think about how big the impact of the citizens can actually be if the flooding comes from an entirely different direction than presumed.

The sea being one of the main causes of flooding was again mentioned in the second interview, where it was stated that '*the sea has already engulfed two or three kilometres of the land*' (interview 2, p. 2). He saw this as both a threat to the current city, as well as for the plans that the city has of growing further to the east and the west, areas which are now flood-prone areas. The respondent believed that the only way to protect these areas, was to build large polder-like system, comparable to the Flevo-polder in the Netherlands. The sea as one of the main threats of the area was mentioned during the third interview as well, where one of the respondents stated that '*due to*

climate change, the danger has increased due to the rising sea level' (interview 3, p. 6). He explained how Jakarta and Semarang are both delta-like areas. Cities that have been built on the ground where the rivers debouch into the ocean.

5.5.2. Land related water problems

Aside from the multiple occasions on which the sea was addressed as one of the major threats for Indonesia, there were several mentions of different problems with land-subsidence that also lead to an increased risk of flooding in Semarang. The first two mentions were about Jakarta as '*a city that is slowly sinking into the ocean'* (interview 2, p. 6) and Jakarta as a city that is hit with a 'double-whammy' where '*the ground-level is going down, and the water-level is going up'* (interview 3, p. 6). But it was not only Jakarta where the problems with land-subsidence were mentioned as one of the causes of flooding. When asked about the situation in Semarang, a similar situation came forward. Our second respondent explained the geography of Semarang, as it was explained in Chapter 4, to be made up of volcanic rocks in the southern part of the city, and a more mushy ground in the northern part of the city. He talked about how in this part of the city '*the land is subsiding. In some areas, this is just a couple of centimetres a year, in other areas sometimes ten to fifteen centimetres a year'* (interview 2, p. 3). This confirms that, what we have learned previously in this thesis, land-subsidence is a real threat to Semarang. Another respondent also spoke about how this area '*has continued land-subsidence'* (interview 5, p. 1). He explained that this was one of the reasons that Semarang had been chosen as a suitable area for the Banger-Polder project. Indonesia's first pilot-polder project. An additional problem, aside from the land sinking below the water-level, that was mentioned during the interviews was that the land subsidence would '*lead to all sorts of problems with the drainage-systems'* (interview 2, p. 6). What he meant with this was that the land-subsidence would create some sort of 'bowl' shape for the area in which all the drainage-water would gather without it having the possibility of flowing out of the area towards the sea, which would cause flooding. As one of the causes of land-subsidence, one of the respondents stated that the inhabitants of Semarang '*are draining the water and making the land subside'* (interview 4, p. 6). We have seen the topic of land-subsidence earlier in this thesis and we will elaborate on it in the coming chapter.

5.5.3. Garbage

One of the presumptions of the causes of flooding was that carelessly disposed garbage would increase the risk and the amount of flooding in Semarang. In one of the previous sub-chapters, the way the local community perceived as mentioned by the respondents was already displayed. In this paragraph, some mentions of garbage leading to flooding will be presented. The most graphic image of the situation concerning garbage in the flood canals was provided by our first respondent: (interview 1, p. 7)

'The canal has turned into a canal that exists purely out of plastics'

We can see the gravity of the situation from this description, and is no surprise that this can lead to more flooding than necessary. This respondent also thinks that it is a problem that is worsening itself. He explained it as '*seeing garbage invites to throwing away more garbage*' (interview 1, p.7). The problem is deeply rooted, as we have seen based on the mentions in the previous sub-chapter, and this respondent was not the only respondent who was familiar with problems caused by garbage: '*we see this in my neighbourhood as well. The rain season has not even passed completely, or someone disposed of all of his construction-waste in the drainage-canals. And all you can do is hope that someone else will clean it before the rain comes again*' (interview 2, p. 6). This fits in the things we heard before, concerning people not caring enough to dispose of their waste properly.

There were also two mentions of garbage actually causing flooding. The first remark was made in the same interview as above: '*We see that a lot of the pumping-systems get jammed by all the trash that ends up in the pumps*' (interview 2, p. 7). This indicates that there is a direct relation between garbage and flooding, embodied in garbage causing pumping-systems to malfunction. Something similar was stated by our fifth respondent, who said that '*The maintenance is not in a good condition so a lot of canals are clogged with waste*' (interview 5, p. 4). Interestingly enough, this respondent believed the clogging of the canals to be caused by poor maintenance, shifting the burden from the local community towards the local government. This is something that will be discussed in the coming chapter.

5.5.4. Physical actions

In the paragraphs above this one, we've seen all the negative sides of flooding and what the effects of flooding are. This might create the image that the local government does not care enough about the problems, this is not the case. This, and the next two, paragraphs are about the physical and institutional improvements that have been made by the (local) government. One of the respondents indicated that '*the government is working on many different aspects of flooding in Semarang*' (interview 2, p. 3) and that '*Semarang is working on a couple of big projects, so the problem is being handled well*' (interview 2, p. 3), where another respondent stated that '*In Semarang they already have the plan to make the northern part a polder*' (interview 5, p. 7). These are several indications that the local government is aware of the problems and is willing to invest in preventing future problems. As we have read in the previous sub-chapter, some people believe that the government does not have the proper funding to act on all the different problems in Semarang, but this paragraph shows us that the intention of improving the protection against the flooding is there. Our third respondent confirmed this. When talking about how prepared the government was to invest in improving the safety of the area, he talked about how the Indonesian government has voluntarily participated in a bigger pilot-project, from which the Banger-Polder pilot project came forward. He saw this as an indication of '*How big the will and motivation is to look into new, alternative ways to deal with the changing climate*' (interview 3, p. 6). This is no surprise when you think about what the country exists of: thousands of islands. Still, it is a hopeful fact that the Indonesian government is prepared to invest in the safety of their country through new ways of water-management. A final remark on this subject can be found in the second interview, where the respondent told about the plan '*to build a large sea-dyke on the coast of Semarang to protect the city*' (interview 2, p. 2). This is

comparable to the plan to protect Jakarta using a large sea-dyke, again proving the willingness of the Indonesian government to improve the situation.

5.5.5. Banger Polder

One of the most notorious, and internationally renowned, projects to protect Semarang is the Banger-Polder pilot project. This polder is the first polder-like project in Indonesia and has been created as a collaboration between Indonesia and the Netherlands. One of the interviews was with a man who was closely involved in the creation of this Polder project. During the interview, he talked about the situation in this area before the Polder project was started. He stated that it was one of the most poor regions of Semarang and that it did not get a lot of attention. They had been struggling with flooding for the past 20 years and the situation (back in early 2000's) was hopeless. Businesses left the area, schools left the area, and criminality increased. He spoke about the difficulties he had trying to regain the trust of the inhabitants over the area, and saw this as one of the hardest things to do during his stay there (interview 3, p. 10). After the implementation of the Banger-Polder project, he quickly saw things improve in the area. He mentioned the return of businesses, schools, inhabitants and even a university in the area (interview 3, p. 11). The area is flourishing again, and the Banger-Polder project is mainly to thank, according to the respondent. A final example of the usefulness of this polder was when he told about some of the recent problems with flooding: '*during the most recent period of heavy flooding, a lot of adjacent neighbourhoods had to deal with water in their houses, but the Banger-Polder area remained dry*' (interview 5, p.11). These are all very positive examples of the polder itself, and the polder has proven itself to be of great value. The organisation behind the Banger-Polder, the SEMA, did get more mixed reviews.

5.5.6. SEMA

As we've read in the previous paragraph, the Banger-Polder project is a, quite, successful project. The organisation behind the Banger-Polder, the SEMA, can be described as a collaboration between the local government, the local community and several businesses (interview 3, p. 1). During the interviews, two different valuations of the SEMA came forward. There were those who called the SEMA a '*Public-Private cooperation*' (interview 3, p. 1), and there were those who believed that the SEMA consisted of '*a group of volunteers*' (interview 2, p. 11). One of the respondents stated that '*Those who are fan of the SEMA are extremely enthusiastic, and see only some minor points of improvement. Those who oppose SEMA say that it is a complete disaster*' (interview 2, p. 10). There is clearly a division in the population concerning the topic of how useful the SEMA actually is.

Some valuable points of the SEMA that were stated was that '*SEMA tries to improve community engagement*' (interview 2, p. 12) and that '*SEMA is of great value when it comes to awareness and the cleaning of the micro-drainage*' (interview 2, p. 11). These two statements can be of value when someone tries to improve the situation, which we have seen in a previous paragraph, concerning motivation, awareness and responsibility.

Those who are not that big of a fan of the SEMA have come with arguments that '*The SEMA can't generate income through taxes, so the government has to fully subsidize the project*' (interview 2, p. 11), or that '*SEMA is not a professional organisation with a lot of expertise*' (interview 2, p. 11) meaning that '*the SEMA currently does not have the organisational power to manage the entire Banger-Polder on its own*' (interview 2, p. 12). These last remarks do not specifically mean that the SEMA is something inherently useless, but that some people believe that it will always be the problem child of the government.

Chapter 6: Discussion

Over the course of the previous chapters, we have learned a lot of different aspects of the Indonesian society. We have seen how the culture has influenced the way the Government works, how the Local Community thinks, and what the relationship between these two is. We have learned about the geography of Semarang and we know what the problems with flooding are in this city, and what some of the causes of these problems are. It is now time to look back at the research questions and see how the data can answer the questions. The research questions were:
- 1: What is the current situation concerning flooding in Semarang?
- 2: What does the local government already do to try and prevent flooding?
- 3: What does the local community already do to try and prevent flooding?
- 4: What aspects of Javanese culture influence the generalised concepts of citizen participation and bottom-up governance?

These four sub-questions will aid in coming to an answer to the main question of this research:

'How can the inhabitants of the Kemijen area in Semarang be motivated to actively participate in the prevention of future flooding?'

The structure of this chapter is that all bits of data gathered in this thesis that help answer each Sub-question will be combined and compared to each other. Since all data obtained through the interviews and through the data-set is discussed elaborately in the previous chapter, this chapter will only contain references to these subjects. All data will still be held against each other to come to a good comparison between different sides to a subject, but the elaborate description will not be repeated.

6.1 What is the current situation concerning flooding in Semarang?

The main subject of this research has always been flooding. Without the problems caused by flooding, there would be no question as to what the local population can do about preventing this. We have seen in chapter 4 that Semarang has some distinctive characteristics which makes the city prone to flooding. Some of these characteristics were the location of Semarang, the rising sea-levels and the clogging of the drainage systems. Through the maps that were displayed in Chapter 4, it became visible that Semarang is built on some kind of shifting angle towards the sea. This can be compared to the Netherlands, but the scale on which this angle is located is much smaller. It was stated during multiple interviews that '*in the whole of Indonesia in the big cities*' these floods were a recurring problem, with the indication that floods in '*Semarang is quite often'*. We can derive from this information that the problem is indeed a serious one.

A very interesting aspect about the nature of the flooding came up during one of the interviews. It was stated that, when flooding in Semarang and Jakarta were compared, the impact of the sea was much more of a problem in Semarang than in Jakarta. What this meant was that most of the flooding that occurred in Semarang was caused by the ocean. This research had always approached the water-problematics through a lens where the river was most responsible for the problems that were caused by flooding. If most of the problems are indeed coming from the sea, this would mean that there is a possibility that, in the end, most inhabitants actually do not have any sort of influence

over the prevention of future flooding. When looking at the data provided in Chapter 4, it becomes imaginable why the sea could have such a big impact in Semarang. When looking at figure 8, we can see that the city of Semarang has stretched into an area that was originally the sea for over 5 kilometres. This is soil that is at, or just below, sea-level. Every increase of just a few millimetres could prove disastrous. When combined with the knowledge that the Java-sea is very sensitive to rising sea-levels, the future does not look bright in terms of flooding caused by the sea.

At the same time, we have learned that there are a lot of water problems that find their cause in phenomenon like land-degradation. Figures 6 and 7 showed which areas of Semarang were affected by land-degradation. It was clear that the north-eastern part of Semarang knows a rate of 6 centimetres a year, to over 10 centimetres a year, this is something that was found in the literature as well. The remarkable aspect of this observation, however, is that the literature uses data from the early 2000's, whereas the data that was used to create figures 6 and 7 comes from the late 2010's. This means that land degradation is a continuous threat to the city of Semarang. During four out of five interviews, land related problems were brought up as a subject. This is another indication of the gravity of the situation. A lot of the land-caused water problems were the effect of groundwater being pumped up by the citizens, sometimes through illegal pumping-installations. Because the quantities of ground-water that were being pumped up were so large, the land above it would subside. A lot of the researches that were published in the late 90's, early 00's, were based on a predicted amount of 25 tot 30 million cubic metres a year. This has caused a lot of researchers to take one of the most negative points of view as the base for their research. Luckily, more recent researches have shown us that the amount of extraction had cut by 50% in the last four years. The only exception to this was 2018, where extraction levels were back on pre-2000 levels. This is an incredibly positive development, since it shows that the stress that is being put on the ground through groundwater extraction has reduced. This might, eventually, reduce the rate at which land subsides.

As a final aspect of probable causes of flooding, garbage will be discussed. This is an element of flooding on which the local community does have an impact. One of the most notorious remarks that was made about the current state of the (flood) canals was that '*The canal has turned into a canal that exists purely out of plastics*'. This remark came from a respondent who had visited flood prone areas in the spring of 2019. This is a very clear indication of how bad the situation around garbage treatment is. This respondent also saw a vicious circle in the garbage-related problems. He believed that whenever an area was already filled with garbage, this would only lead to people throwing away more garbage in the area. When speaking about factors that the local community does, in fact, have influence over, this is one of the main themes. The canals being clogged with garbage led to problems with pumping-station, as was mentioned by multiple respondents. Even though the threat of flooding coming from the sea might be higher, the careless disposal of garbage is something that adds greatly to the risk of future flooding.

When asked about why it could be that the people handled their trash so carelessly, a lot of the answers were that the people simply did not care about their trash, that it was the only way they had to get rid of their trash, or that, as long as it did not affect their own business, people would simply not care about the trash at all. This is an element where a lot of improvement is possible. We've seen that, apparently, there is little to no garbage collection outside of the old city. Combined

with this is that the people do not know what they cause, and that the short-term satisfaction is more important than the long-term prevention of possible flooding. If these aspects could be taught through education, we might be able to change the gravity of the situation and thus aid in the prevention of future flooding.

When we go back to the original sub-question, 'what is the current situation concerning flooding in Semarang?', we can answer it the following:

The current situation concerning flooding in Semarang is that the city is still facing multiple aspects of flooding. There are two major causes of flooding in the area; the sea and land degradation. During this research, it became more and more visible that Semarang is sinking, whilst the sea-levels are rising. This combination of elements leads to an increased vulnerability of the region. Some of the land-degradation can be addressed to the harvesting of groundwater from beneath the city. Thankfully, this is an element which has visibly declined over the past decade, meaning that the rate of land degradation will not worsen. We also saw that the north-western part of the city is built on what was originally sea-bedding. This also increases the vulnerability of the area, since this area has never been above sea-level. When it comes to the factor of garbage, there were also clear indications that this problem is severe and that it had led to problems with pumping-systems in the past. This factor adds to the problems of flooding, but it is the factor that might most easily be worked on, since a lot of the responsibility can be addressed to the local community.

6.2 What does the local government already try and do to prevent flooding?

In the sub-chapter above, it became clear that Semarang does have to deal with all kinds of different problems that lead to flooding, either withing their field of impact, or outside of that. The most logical question that follows is what the local government actually does to try and prevent the flooding. As a first clear statement: the government does want to work on preventing flooding. This is something that came forward out of many of the interviews, where on multiple occasions the statement was made that '*the government is working on many different aspects of flooding in Semarang'*. This is most visible in the creation of the Banger-Polder pilot project and the SEMA institute that is linked to the Banger-Polder. By participating in an international focus-group, the Indonesian government showed that they are willing to invest in the prevention of future flooding.

However, the opinions on the way the government acts were divided. When talking to some of the respondents, they indicated that it was positive that the government has been working on these kinds of problems. It was also stated that the situation was improving. This was explained by the fact that Indonesia is still developing as a democracy, since they have only switched to a more democratic system over 20 to 30 years ago. There is also a lot of funding coming from the government towards the community. Through the interviews, we have learned that there are several funding-programs for different parts of Indonesia. We have seen that there is a specific funding for small villages and for bigger cities. When compared to other cities, Semarang is one of the cities that receives relatively large amounts of funding. The next question that arise is if this funding does end up in the right places. During one of the interviews, the statement was made that,

currently, the local government is investing (large) amounts of their money in projects designed to prevent (the gravity of) future flooding. As an addition to this remark, the respondent stated that this might be temporary. If the government suddenly decides to re-prioritize their funding in a different sector, the water-management projects would be left without any funding. This was also stated in another interview, where it came to light that the Indonesian government usually decides what they are going to do with their money on a yearly basis. This lack of continuity can, logically, lead to a lot of uncertainty. When developers have to worry about whether or not their project is going to be funded next year, they will most likely lead to less stimulation of original ideas, since there is no certainty the project is going to be funded anyway. Our second respondent explained this by giving the example of how the large-scale dyke project in Jakarta should have been finished in 2016, but as of 2020, only 15% of this project has been finished. He believed that the way of prioritizing funds was (partly) to blame for this. This leads us to some of the critical remarks that were heard. During one of the interviews, a very harsh comment was heard. It was stated that the government would treat inhabitants of the flood-prone areas as objects. Coming from someone who has lived in Indonesia, this is a remark that has to be taken seriously. He continued to explain how in a lot of areas, the participation as it was presented by the government was in fact a sort of sham. The government would act as if the local community would have a say in or influence over a certain project, when in fact none of this was true. This reminds us of the lowest step on Arnstein's ladder. We learned that this could be interpret as *manipulation* of the community. If the local government really wants to implement more citizen participation and stakeholder dialogue, this is something that has to change radically.

Aside from the positive and negative valuations of the Indonesian government, one of the most eye-catching projects in Semarang is undoubtedly the Banger-Polder pilot project. This project is the first polder-project in Indonesia, and it's located in the north-eastern part of Semarang. The area in which the Polder had been built knew many different problems in the 20 years prior to the implementation of the polder halfway through the 00's. These problems included flooding, criminality, businesses leaving the area, and eventually inhabitants leaving the area. After the implementation of the Polder project, life improved rapidly in the area. Businesses, schools, and inhabitants returned to the area. This is a very good example of how the Indonesian government intervened in a very useful and successful way. When asked about the most important task of the Polder, keeping the water out of the area, the answer was that during the most recent flooding, the Polder area was the only area in the vicinity that remained dry.

As with the general evaluation of the work done by the government, the opinions about the Banger Polder were divided as well. In the paragraph above, we have seen that the Polder-project has made it possible for the area to flourish again. Despite these positive effects, there were also some negative remarks concerning the Banger-Polder and the organisation behind it, the SEMA. As with the uncertainty about a continuous funding of projects by the government, the funding of the Banger-Polder is also something that can cause many headaches. Since it is only a pilot, there is no actual implementation in Indonesian Law for the Polder. This means that the Banger-Polder is not able to generate funds through taxes and is therefore completely dependent of the (local) government. Some opposers of the project did not understand why so much money would go to an organization like the SEMA, since many deemed it to be a 'voluntarily' organization without any real knowledge or organisational power to manage such an ambitious project as the Banger-Polder.

When we go back to the original sub-question of this paragraph, 'what does the local government already do to try and prevent flooding', we can answer it the following:

> *There are many indications that the Indonesian, and Semarang, governments are working on many different aspects of the prevention of flooding. We have seen that they have made budget available for the realization of many big projects, but we have also learnt that the Indonesian government sometimes makes the decision to prioritize other projects over water-management. This can happen on a yearly basis, which can lead to a lot of uncertainty. By participating in the process which eventually led to the creation of the Banger-Polder project, the Indonesian government has made a statement that they are aware of the changing climate and the increased risks that this will bring to areas like Semarang and that they are willing to invest in new ways of reducing the risk.*

6.3 What does the local community already try and do to prevent flooding?

We have seen what the local government does to try and prevent flooding in Semarang, and in this sub-chapter the attempts of the local community will be discussed. We will begin with a statement: There is a lot of room for improvement. During the interviews, it became clear that large parts of the local community are still expecting the local government to solve all the problems. They see many problems as the responsibility of the government, and if the chosen major does not live up to the expectations, they just elect a new one. In the previous sub-chapter, we have seen that Indonesia is still developing governmentally. This might be one of the reasons that the local community is not too self-organizing.

Despite the paragraph above, there are some indications of civilians who want to participate on a deeper level. This was mainly about participating in the local communities, which turned out to be a central keystone in the lives of many inhabitants. One named reason for this was that the local community would then have a better insight on where the funding that the community receives would go to. This can be linked back to the previous sub-chapter, where we have seen that there is a certain level of uncertainty when it comes to receiving governmental funds. One of the most important things that we should not forget, and which has proven to be of great value throughout this thesis, is that the social structures in Indonesia are very different compared to those in many western countries, including the Netherlands. We have learned that aspects as *Musyawarah, Kelurahan* and *Gotong Royong* are incredibly important in the lives of many inhabitants, and that these structures might not be as prominently visible as the regular governmental works. This makes them something that can easily be overlooked, despite its unmissable value.

When we turn to what the local community actually does to try and prevent flooding, there is no real example. There are plenty of inhabitants who willingly participate in projects such as the Banger-Polder, but the majority of the inhabitants simply does not have flood-prevention as one of its main concerns. A very real and understandable cause for this is that a serious proportion of the inhabitants of the flood-prone areas has to prioritize getting something to eat over everything else. It is common sense that eating and drinking is at the very top of everyone's priority list. As we've read before, almost half of the population of the Kemijen neighbourhood is at risk of poverty. The

Kemijen area is also situated next to the Banger-Polder area. A lot of the inhabitants of the area that is nowadays protected by the Banger-Polder also have to think about food before anything else. The structural poverty in these parts of Semarang does not help with people willingly participating in preventing flooding. When these areas are compared to areas in Jakarta, a remark was made about that the people in Jakarta are generally speaking much richer. The experts working in Indonesia saw that certain initiatives concerning flood-prevention did arise in Jakarta, whereas they did not arise in Semarang, and believed this to be due to the lack of money for many inhabitants of Semarang.

Another aspect that does not help with the prevention of flooding is that a lot of inhabitants of the flood prone areas do not know high levels of responsibility when it comes to garbage. We've learned that garbage can be held accountable for several problems with pumping stations, leading to further flooding of different areas. When askes how the citizens perceive garbage, and whose responsibility it is, it became very clear that there is a lot of room for improvement. One of the recurring answers was that the people simply did not know what their careless disposal of garbage would cause, or that they felt that it is a problem of the city, and not of the population. The subject of (better) waste-management is a subject where it is most probable that a lot of ground can be gained. This can be done through education, which is free up until Junior High School for all Indonesians. Another way of realising better waste management was to add a monetary bonus to carefully managing your waste. This is something that might prove to be very useful, since it was stated that a lot of people would not mind doing anything, as long as there is money involved. But on the other hand, we have read the remarks made about how the government is not always swimming in money, so it is very understandable that such a reward-system simply would not be possible.

When we go back to the original sub-question of this paragraph, 'what does the local community try and do to prevent flooding?', it can be answered the following:

When it comes to citizen participation concerning the prevention of flooding, one could come off disappointed. There are not many examples of large-scale citizen projects where they try and prevent flooding, if only it be through increased awareness. There are mentions of several NGO's in the region who are working on this problem, but these mentions are still scarce. It seems that a lot of the problems concerning improper waste management find its roots in a lack of awareness and in a lack of other, better, options. When thinking about new ways of involving the community better in preventing flooding, education seems like the easiest and fastest way to increase the community participation.

6.4 What aspects of Javanese culture influence the generalized conceptions of citizen participation and bottom-up approaches?

When this research was started, a 'western' way of thinking was followed. It quickly became noted that this would not get the research very far, as the first couple of interviews had already pointed out aspects of Indonesian culture that are of relevance in decision-making processes, but are not fitting in existing structures of governance and stakeholder dialogue. When asking what aspects of Javanese culture play an important role, we can easily state that there are three important aspects that are of importance. The *Musyawarah, the Gotong Royong, and the Kelurahan.* The *Musyawarah* is the communal gathering in which everyone involved could have a chance to be heard. This is an element which comes very close to the ideas of Stakeholder dialogue as explained in the second chapter. The idea of *Gotong Royong* was that there would be a communal carrying of burdens

When approaching a country like Indonesia and thinking 'I will bring this knowledge and implement it there', you will not get far. It is very important to understand the way of thinking and the social relations that people have with each other. One of the things that was mentioned the most during the different interviews was the importance of Social Capital. The combination of the hierarchical society that is Indonesia, and the importance of Social Capital in the Indonesian culture can prove a difficult, yet interesting combination of elements. What was interesting was that multiple observants stated that you have to know people in high places, be able to convince those people of why your plans are important, and only then these plans would become reality. As with other elements that were discussed previously in this research, this is an element that could easily be overlooked.

When we compare the concept of the *Musyawarah* with the concept of Stakeholder Dialogue, it is not difficult to see several similarities between the two of them. Bot are focussed on involving the different actors (stakeholders) of a certain situation or project. When looking at citizen participation, Arnstein's ladder comes into play. The middle tier of this ladder is about Consultation. This step is about gathering information on the opinion of the public, even though Arnstein herself sees this as a 'window dressing ritual' (having no real value). The concept of *Musyawarah* is a very good representation of this tier. The core essence of the *Musyawarah* was to make sure that everybody involved would have the chance to make themselves heard.

A final important aspect in Indonesian governmental culture, is the concept of the *Kelurahan*. The *Kelurahan* is the lowest administrative layer in the Indonesian governmental structure. During the different interviews, it came forward that a lot of people would rely heavily on the opinions and actions of the *Kelurahan*. This was also something that was prominent in the dataset containing interviews with inhabitants of Semarang. The current belief is now that a lot of community engagement, awareness, and participation could be stirred up through the *Kelurahan*.

When we go back to the original sub-question of this paragraph, 'What aspects of Javanese culture influence the generalized conceptions of citizen participation and bottom-up approaches?', it can be answered the following:

It is of utmost important to respect and understand the different cultural elements that influence the Indonesian way of governing. It is not possible to just bring about western ideas of participation, stakeholder-inclusion, and governance to these regions and forcefully try to implement them. It is much more important to learn the Indonesian way of thinking, because this is the way through which change can be made. The important elements that influence the generalized concepts of citizen participation and bottom-up approaches are mainly those of the Musyawarah, Gotong Royong and the Kelurahan. The final, and maybe the most important, aspect that influences the different conceptions, is the extremely high importance of Social Capital. Whereas the western culture tends to lean heavily on all kinds of bureaucratic processes, the way to get things done in Indonesia is by bonding with those around you. If you are able to ensure a mutual feeling of confidence and trust, you will be able to achieve your goals.

Chapter 7. Conclusion

Semarang has known flooding for many years, and Semarang will know flooding for many years to come. We have seen that there are some fundamental challenges when it comes to the geography of Semarang. The city is built on a slope, making the surrounding area some sort of delta. The soil itself might be too weak to hold the weight of an ever-growing city and the combination of land-degradation and rising sea-levels has not proven itself to be an amazing combination.

However, there are plenty of examples of how the Indonesian government is working on many different ways to prevent future flooding. Of course, they might not always have all the funding necessary for all the different projects, and Indonesia is still developing as a democratic society, but the heart is in the right place. We have learned that the past 20 years have known amazing levels of growth for the Indonesian society, on social and on physical level. We have seen that some of the causes of land-subsidence have decreased over the past decade, and that new laws were applied to ensure a better involvement of different layers of government and stakeholders.

We have learnt what some of the problems are with the community not participating at its capacity and what some of the causes are of a, almost careless, way of disposing garbage. For many inhabitants of Indonesia, there seems to be no mental room for caring about problems that seem like a distant worry. Their first priority will go to supplying enough food for themselves and their family. It is logical that the careful disposal of waste will therefore be pushed back a little. But the situation is far from hopeless. There are ever increasing sounds of citizens who want to participate in areas that affect their lives. When you think about the fact that the people who are currently in charge of the country have grown up under a totally different regime, with a totally different way of governing, it is no shame that there is still a lot of room to improve.

As a final conclusion, we will look back at the original research question:

> *'How can the inhabitants of the Kemijen area in Semarang be motivated to actively participate in the prevention of future flooding?'*

When we combine the different elements that are stated in the pages above, we can generate the following answer, including a recommendation to the local government:

> *One of the most important elements of motivating the inhabitants comes from educating the inhabitants. By making them understand that their careless disposal of waste directly impacts the safety of their own homes, the element of awareness can be addressed. But education is not enough. It is important that the local government becomes a role-model in this situation. They have to make money available on a structural basis, so that part of the uncertainty around the availability of funding is taken away. By using the Indonesian traditions like the Musyawarah and Kelurahan, a level playing field has to be created. In this, there must be room for the inhabitants of the neighbourhood, and other stakeholders who are involved, to make themselves heard and it is the responsibility of the Government to do something with the information gathered through these sessions. Finally, the local government must target 'key-players' in the neighbourhood, trough who the local community can be motivated. This will also bring in the element of social capital into the equation. These elements will be the basis on which can be built when it comes to motivating the inhabitants.*

Chapter 8. Reflection

Over the course of the past few months, the soul of this research has changed multiple times. What originally started as a research that would consist of an actual visit of Semarang, combined with interviews with experts and inhabitants of the area, changed to a research that had to be conducted out of an attic in Nijmegen. It became impossible to ask the inhabitants of the area the questions that were relevant for this research. This all forced me to rethink the relevance of this research, and whether it was even possible at all to conduct this research in a proper way. I made the decision to continue with this specific research because I feel a certain level of affection with Semarang. I visited the city a couple of years ago, and my grandfather lived in Semarang for a couple of years. This caused a certain determination to continue with this research.

The initial phases of the research started of well, but when I had to rethink the core aspects of this research, I ran into some difficulties. This took me a lot of time to iron-out, causing some delay in the process. One of the elements of this research that I found to be the most difficult, was creating a good conceptual model. I still do not fully harness the qualities to make clear distinctions between different aspects of such a model and will try to improve on this in the future.

I was lucky that I got in touch with someone who knew the director of Witteveen+Bos in Indonesia, through which I was able to organise my interviews. Even though the people who were interviewed did not include all the different respondents that I had imagined when I began this research, I am still extremely glad that I had the possibility to have my interviews with these experts. They have helped me massively with understanding the Indonesian culture and helped me generate this research, which I hope will be used as a certain 'base-layer' for coming researches.

During the process of coding, the flow was halted because I found it difficult to think of useful codes and I felt that I was wandering without a clear goal in mind. This took me a lot longer than expected and up to this moment, I am still not fully satisfied with how I approached the coding-process. This is one of the major learning-points for my master's thesis.

I hope that the coming generations of students will be able to visit Semarang and will be able to make an impact in the region, as I had hoped to do.

Selamat Jalan

Literature

Arnstein, S. (1969). A ladder of citizen participation. *Journal of the American planning association.* 45(4), 216-224.

Badun Pusat Statistik (2010). Kemijen. Retrieved on 05-06-2020 from https://bps.go.id/pencarian.html?searching=kemijen&yt1=Cari

Dewi, A. (2007). Community-Based Analysis of Coping with Urban Flooding: a Case Study in Semarang, Indonesia.

Delinom, R., et al. (2009). The contribution of human activities to subsurface environment degradation in Greater Jakarta Area, Indonesia. *Science of the Total Environment, 407(9), 3129-3141.* https://doi.org/10.1016/j.scitotenv.2008.10.003

Freeman, R. E., (1984). Strategic Management. *A stakeholder approach.* Cambridge University Press

Freeman, R. E., et al. (2010). Stakeholder Theory: The state of the art. *The academy of Management Annals.*

Gurney, G. G., et al. (2016). Participation in devolved commons management: Multiscale socioeconomic factors related to individuals' participation in community-based management of marine protected areas in Inonesia. *Environmental Science & Policy, 61,* 212-220.

Harwitasari, D., & van Ast, J. A. (2011). Climate change adaptation in practice: People's responses to tidal flooding in Semarang, Indonesia. *Journal of Flood Risk Management*, *4*(3), 216–233. https://doi.org/10.1111/j.1753-318X.2011.01104.x

Harwitasari, D. (2009). Adaptation Responses to Tidal Flooding in Semarang, Indonesia, (October 2008). Retrieved from http://thesis.eur.nl/pub/12145/(1)33555.pdf

Hoogheemraadschap Schiedam (2017). Het Banger polder pilot project in Semarang. Retrieved from https://hhsk2017.nl/wp-content/uploads/2017/08/Het-Banger-Polder-pilot-project-in-Semarang.pdf

Jatmiko, D. W. (2018). Study of Flood and Coastal Flood Control in Madukoro Area, Semarang City, Indonesia. *Journal of the Civil Engineering Forum*, *4*(3), 189.

Ley, L. (2018). Discipline and Drain: River Normalization and Semarang's Fight against Tidal Flooding. *Indonesia, 105*, 53-75.

Kawamura, K. (2011). Consensus and Democracy in Indonesia: *Musyawarah-Mufakay* Revisited. Retrieved from https://www.ide.go.jp/English/Publish/Download/Dp/308.html

Kievik, M., & Gutteling, J. M. (2011). Yes, we can: Motivate Dutch citizens to engage in self-protective behavior with regard to flood risks. *Natural Hazards*, *59*(3), 1475–1490. https://doi.org/10.1007/s11069-011-9845-1

Kismawardhani, R., Wirastriya, A., Berlianty, D. (2018). Sea level rise in the Java Sea based on Altimetry Sattelites data over 1993-2015.

Marfai, M. A., & King, L. (2008, October). Coastal flood management in Semarang, Indonesia. *Environmental Geology*. https://doi.org/10.1007/s00254-007-1101-3

Marfai, M. A., King, L., Sartohadi, J., Sudrajat, S., Budiani, S. R., & Yulianto, F. (2008). The impact of tidal flooding on a coastal community in Semarang, Indonesia. *Environmentalist*, *28*(3), 237–248. https://doi.org/10.1007/s10669-007-9134-4

Marfai, M. A., & King, L. (2008). Potential vulnerability implications of coastal inundation due to sea level rise for the coastal zone of Semarang city, Indonesia. *Environmental Geology*, *54*(6), 1235–1245. https://doi.org/10.1007/s00254-007-0906-4

Marfai, M.A, & King, L. (2007). Monitoring land subsidence in Semarang, Indonesia. *Environmental Geology, 53(3),* 651-659.

Matsuda, H., & Takeuchi, K. (2018). Approach to Biofuel Issues from the Perspective of Sustainability Science Studies (pp. 11–15). https://doi.org/10.1007/978-4-431-54895-9_2

Popang, M. & Tirta, B. (2020). *Water Management Semarang*. Witteveen+Bos.

Saputra, E., Spit, T., & Zoomers, A. (2019). Living in a Bottomless Pit: Households' Responses to Land Subsidence, an Example from Indonesia. *Journal of Environmental Protection*, *10*(01), 1–21. https://doi.org/10.4236/jep.2019.101001

Seamon, D., Lundberg, A. (2017). Humanistic geography. *International Encyclopedia of Geography: People, the Earth, Environment and Technology*. John Wiley & Sons, Ltd.

Smits, A (2013). Collective social capital and adaptation strategies to flooding. Retrieved on 22-5-2018 from http://theses.ubn.ru.nl/bitstream/handle/123456789/2463/Smits%2c_Anna_1.pdf?sequence=1

Sofner B, Schmidt G (2002) Groundwater studies in urban centre of Indonesia, Federal Institute for geosciences and Natural Sciences, Hannover, Germany

Susiatiningsih, H., Farabi, N., Paramasatya, S. (2018). Semarang City's Flood Risk: A Threat to Human Security.

Tuan, Y. F., (1973). Space and Place. *The perspective of Experience.* University of Minnesota Press.

Government of Semarang (2018). Resilient Semarang Strategy Book.

Figures

Figure 1. View of Flooded Neighbourhood Semarang. Source: John Arns, Flickr.

Figure 2. Arnstein's Ladder. Retrieved from: https://citizenshandbook.org/arnsteinsladder.html

Figure 3. Gilles Bierling. *Example of coding process.*

Figure 4. Witteveen+Bos. Cross-section of Semarang. Retrieved through personal communication.

Figure 5. Witteveen+Bos. Land composition of Semarang. Retrieved through personal communication.

Figure 6. Witteveen+Bos. Groundwater extraction in Semarang. Retrieved through personal communication.

Figure 7. Witteveen+Bos. Land degradation in Semarang. Received through personal communication.

Figure 8. Witteveen+Bos. Closeup of land degradation in Semarang. Received through personal communication.

Figure 9. Witteveen+Bos. Growth of Semarang into the ocean. Received through personal communication.

Figure 10. Google Maps. Map of Java. Retrieved from: https://www.google.com/maps/place/Java/@-7.3226257,107.663072,7z/data=!3m1!4b1!4m5!3m4!1s0x2e7aa07ed2323237:0x86fe1c59d6abed60!8m2!3d-7.6145292!4d110.7122465

Figure 11. Google Maps. Map of Semarang. Retrieved from: https://www.google.com/maps/place/Semarang,+Semarang+City,+Midden-Java,+Indonesi%C3%AB/@-7.0247246,110.3470246,12z/data=!3m1!4b1!4m5!3m4!1s0x2e708b4d3f0d024d:0x1e0432b9da5cb9f2!8m2!3d-7.0051453!4d110.4381254