

Moving from Tanjung Mas, Semarang

The effects of floods on the life of the coastal inhabitants of the city



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3020312

Master thesis

Nijmegen

August 2014

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<http://beitemmett.blogspot.nl/2013/01/indonesian-floods.html>

Preface

In front of you lays my master thesis on which I worked the last couple of years. After a lot of reading, talking to many different people, and discovering during my period of internships in Indonesia, I got an in-depth understanding of Indonesia, its culture, the nice landscapes, but I also learned a lot about the big environmental, economic, political and social problems. I was always interested in movements around the world, temporary movements or long term migrations. And in trying to understand the factors that drive people to migrate. But I am even more interested in the reasons why people do not migrate, especially after working on this thesis. I myself was a migrant in Indonesia as well, and as almost everyone, I had my prejudgments about Indonesia and its culture. Also about the environmental problems in my research area. I thought it would be bad, but the first time I saw the situation in Tanjung Mas, I thought it was even worse than I expected and I was shocked. However, I noticed that the more time I was spending in that neighbourhood, the more I got used to the condition. In the end I could even imagine why people would not move out.

The one and a half year I worked on this thesis was an intensive period in which not only this thesis was formed, but I was formed and changed myself as well. That is why I would like to mention some people who helped me and motivated me during the process of writing this thesis, and who were very important for me during my stay in Indonesia. First of all I would like to thank all the experts and respondents who wanted to contribute to this research by letting me interview them. It was very interesting and sometimes shocking to listen to the stories. I want to thank Martin van der Velde, my supervisor, for his motivating and positive comments and his ideas for finding an internship. Next to that I want to thank Pak Wijanto Hadipuro, my supervisor during my internship at UNKIA, Semarang. He told me a lot about the situation in Tanjung Mas, he showed me around in my research area, and introduced me to experts about the subject of my thesis. Jeanny was of great help for me as well during the interviews with the inhabitants, because she was my translator. I would like to thank my parents and 'little' brother for supporting me and being proud of me no matter if I was going to finish this thesis or not. Thanks to my friends as well, for supporting me and giving me the necessary distraction which I needed once in a while. Especially my friends in Semarang, since they made my stay there an experience never to forget. In the last place I want to thank you for reading this thesis, I hope you will enjoy reading it. It means a lot to me.

Nijmegen, July 28th 2014,

Fenki Evers

Summary

Tanjung Mas, a neighbourhood in the northern part of Semarang, suffers from big environmental problems. Due to land subsidence, the rising sea level and heavy rains, some parts of the neighbourhood experience floods every day. And this will only become worse in the future, because of the continuing of the land subsidence of 9 centimeters every year, increased by ground water extraction and construction load. Water will flow into the houses, and people are not able to go anywhere. So people cannot escape from this silent disaster, which makes it socially relevant to do this research. However, the inhabitants are not moving out of the neighbourhood. So migration is still an exception. Besides, not a lot of research is done on this topic, especially not in relation to environmental changes. Research about the relation between migration and environmental change did not really exist until the 1980s, which is quite recent. That makes it academically relevant to do this research, which leads to the aim of this research:

The aim of this research is to acquire an in-depth understanding of the effects of floods on the livelihoods of the inhabitants of the village Tanjung Mas in the city of Semarang, and its relation to the perception about migration, based on their (im)mobility and the decision-making process of migration.

To reach the aim of this research and to answer the main question, three theoretical concepts are used to understand the different parts of this aim, described in Chapter 2. First the Sustainable Livelihood Approach, second the Threshold Approach, and third the Theory of Planned Behavior. The Sustainable Livelihood Approach, focuses on livelihoods that are able to maintain or increase its assets and capabilities for future generations, provide sustainable livelihood opportunities, can cope with, and recover from stress and shocks, and benefit other livelihoods at the global and local level in short and long term. It is important to acknowledge that people are central in this theory and that they will be the starting point of the analysis. Vulnerability is the most important concept of The Livelihood Theory. If we understand the vulnerability of the inhabitants and the way in which the floods effect their vulnerability, it will be possible to get a better understanding of the mobility of the people as well. So we will know why people prefer to stay in Tanjung Mas, even though the environmental circumstances are becoming worse. Vulnerability is about in what extend people are able to deal with the external situation. It is closely linked to access to several assets, which can be distinguished in natural, physical, human, financial, and social assets.

The Threshold Model gives an insight in the mobility and immobility of the inhabitants of Tanjung Mas. Next to the classical push and pull factors, this approach also keeps in mind that people sometimes do not even think about migration, so they stay in the stage of indifference, influenced by the feeling of belonging. Besides, the model does not only look at the decision to go, it also focuses on the decision to stay, with keep and repel factors. So that makes it possible to understand why people do not move out and are immobile. The Theory of Planned Behavior is used to acquire an in-depth understanding of the behavior of the inhabitants Tanjung Mas, and to understand their decision and the process of decision-making to stay or to move. Based on their attitude towards behavior, the subjective norm, and perceived behavioral control. It is important to keep in mind that these three factors are not about the 'real' influence on the intention to move, but it is about how the individual beliefs that these factors influence behavior.

To acquire an in-depth understanding of the influence of the floods on the livelihoods and their link to (im)mobility and the decision-making process to move, a Phenomenological Research Method is used, which is described in Chapter 3. A phenomenon is only perceived and understood in the context of the experience of the individual. So the approach is based on the distinction between knowledge and subjectivity, and thereby taking the personal perspective of the actor as a starting point. That is why this method provides a way to gain insides of people's motivations and actions of certain behavior. Data is collected from literature, interviews with experts and observations, but especially by interviews with inhabitants of Tanjung Mas, since their experiences are the starting point of the analysis. These respondents were found while walking through the streets and approaching people, while a differentiation between sex and age was kept in mind. In the end 21 interviews were conducted with help of a translator. Seven interviews in every of the three parts of Tanjung Mas,. When analyzing the interviews the computer program ATLAS.ti was used to order the material. After determining the themes it was tried to make clear what all persons said about the themes, so in the end a list of points about the themes was formed, with descriptions.

In Chapter 4 a description is given about Semarang and the choice of the neighbourhood Tanjung Mas, based on literature and interviews with experts. Semarang is the capital city of Central Java. The city has a lower and upper part. The lower part is formed quite recently by sedimentation, which is why it is not yet consolidated, and it is not able to carry a lot of weight and handle extreme ground water extraction, both increased by the massive population growth. The government is not really focusing on environmental change, but invests more time and money to increase the economic situation of the city. Tanjung Mas is divided into three parts, Kota Lama, Kebon Harjo, and Tambak Lorok, that differ in social and economic status and in environmental conditions related to the floods. The best situation is in the Kota Lama and the worst in Tambak Lorok. Tanjung Mas as a research area is chosen because of this distinction between the three different parts of the neighbourhood.

This makes it possible to compare of the impacts of the floods on the people living in the neighbourhood.

In Chapter 5 the respondents are introduced and their experiences about the floods are explained. Just as the conversations with the experts and the information from the literature, the floods are experienced as worst in Tambak Lorok and best in Kota Lama. The effects on the livelihoods are discussed in Chapter 6. The physical assets are clearly affected by the floods, just as the financial capital. The effects on the social and human capital are visible, but not that obvious. Again a distinction between the different parts of Tanjung Mas can be made. The livelihoods are less effected in Kota Lama, a little bit more in Kebon Harjo, and most in Tambak Lorok. So according to both, the literature and experts, and the inhabitants of Tanjung Mas, the increasing floods do have a bad influence on the assets of the livelihoods of the people. This in a negative spiral, since protection and making a living will cost more time and money. So this makes people in Tanjung Mas very vulnerable for the floods right now, and even more in the future.

Next to that, people do not really think about the future, so they do not take action to better their livelihoods on the long term. They live by the day, which is one of the reasons why people are not moving out of Tanjung Mas to avoid the floods and to get a better life, which are the main push factors in the experiences of the respondents. This is discussed in Chapter 7. The respondents just do not think about migration as an option at all, they belong in a stage of indifference, so mostly their attitude about migration is negative. Besides, if people think about migration there are other aspects that keep them in Tanjung Mas. Things that they perceive as controlling factor, with the lack of money as the biggest issue. And even though the situation differs in all of the three parts of the neighbourhood, the eventual outcome on the perception on migration is not that different, since all people will stay in the neighbourhood.

So in the end, even though the floods are affecting, and will increasingly affect, the livelihoods of all of the inhabitants of Tanjung Mas, some more compared to others, people will not move out of the neighbourhood in any way. This again makes clear that migration is an exception, even in the most unlivable conditions. People will accept and adapt to these conditions in order to make the best out of their lives.

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1. Introduction

In some periods, people who live in the coastal area of Semarang have to sweep the water out of their houses, every day again (Hadipuro, 2012). Because of land subsidence, sea level rise and the heavy rains, the inhabitants of the northern part of Semarang are daily affected by the floods (Marfai, King, Sartohadi, et al., 2008; Hadipuro, 2012). This affects and changes their livelihoods in several ways (Hadipuro, 2012). The condition in which people have to live is very bad, people sleep on the floor, their belongings are damaged because of the water and most of the time people do not have a permanent job. Besides, because of land subsidence the situation will only become worse in the future. You would think that people in those parts of Semarang would move out to other parts of the city and that these livelihood changes would influence the mobility and immobility of the inhabitants and their decision-making process to migrate out of the coastal area. However, most of the people do not even think about migration. So what makes people remaining in their own house with sometimes unlivable conditions?

Floods in Semarang

Semarang has to deal with three kinds of floods. The first two are local floods and river floods, which are especially caused by rainfall and the bad capacity of the drainage system (Putranto & Rüde, 2011). Especially in the rainy season, when there is rainfall of almost 250 millimeter every month (worldweatheronline, n.d.). The other kind of flood is tidal flooding (Putranto & Rüde, 2011), on which the main focus will lay in this thesis. In some parts of the coastal area of the city, the tidal floods occur every day. Tidal floods are closely related to land subsidence, which is mainly caused by groundwater extraction (Hadipuro, 2012; Abidin, et al., 2010; Lubis, et al., 2011; Putranto & Rüde, 2011; Marfai & King, 2008; Oliver-Smith, 2011). In the coastal area of Semarang, the land subsidence is about nine centimeters every year (Hadipuro, 2012; Abidin, et al., 2010; Lubis, et al., 2011). Large parts of northern Semarang are already below sea-level and this will only increase in the future (Hadipuro, 2012). Next to that the number and the effects of tidal floods will increase (Harwitasari & Van Ast, 2011). Nowadays, every five to seven years the inhabitants of the area have to raise the floor level of their houses with more than half a meter (Hadipuro, 2012; Marfai, et al., 2008b). Besides they build bridges, dams and small dykes in their neighbourhood and around their own houses as a protection for the water (ibid.). But those small solutions on the local level are only temporary. This is the case in Tanjung Mas as well, a neighbourhood in the northern part of Semarang, which will be the research area in this thesis. The choice for this neighbourhood will be explained in Chapter 4.

“Land subsidence occurs when the elevation of the land is lowered from its previous position” (Harwitasari & Van Ast, 2011: 2). It occurs in more cities in Indonesia, but in Semarang it happens most drastically (Kobayashi, 2004). The effects of land subsidence are visible by cracked buildings and infrastructure, and by increased inland sea water intrusion and a wider expansion of the coastal flooding area (Abdin, et al., 2010). A part of the land subsidence in Semarang is caused by natural consolidation and the load of buildings and constructions (Abidin, et al., 2010; Harwitasari & Van Ast, 2011). But it is mainly related to groundwater extraction, especially by industries (Hadipuro, 2012; Abidin, et al., 2010; Lubis, et al., 2011; Putranto & Rde, 2011; Marfai & King, 2008; Oliver-Smith, 2011), which can be seen as a major accelerating human-induced factor (Harwitasari & Van Ast, 2011). So the land subsidence is not caused by the inhabitants who suffer most (Hadipuro, 2012).

Next to land subsidence the rising sea level is a major problem as well, which is accelerated by the current climate change (Harwitasari & Van Ast, 2011; Marfai & King, 2008; Marfai, et al., 2008b; Oliver-Smith, 2011). It is estimated that in 2019 and 2070 the sea level will rise 13 and 45 centimeters respectively (Damen & Sutanta, n.d.). Other estimations say that in 2100 the sea level in Indonesia has increased with 100 centimeter (Harwitasari & Van Ast, 2011). How much it will be exactly can only be known in the future, but it is clear that in the next decades the coast of Indonesia will certainly suffer from those environmental changes. The sea level rise will lead to environmental changes like coastal erosion, inundation, increased salinity and floods (Marfai & King, 2008). Especially combined with land subsidence, sea level rise gives an even higher relative sea level rise, which is the level of the sea in relation to the land (Oliver-Smith, 2011). Together this will lead to increasing tidal floods (Harwitasari, 2011).

So it is clear that in the next decades the coast of Indonesia will suffer (Harwitasari & Van Ast, 2011). And you can imagine that this will have major impacts on the life of its inhabitants, and that economic and social problems will occur (Dewi, 2007). It is known that people in urban coastal areas are the most vulnerable among the population (Barbiere & Confalonieri, 2011; Oliver-Smith, 2011; Epiney, 2011), which makes the effects bigger (D. Dodman, personal communication (pc), 17-10-2013). And the environmental changes will create an even more vulnerable livelihood for the inhabitants in the coastal area of Semarang (Marfai, et al., 2008a). In the last years, “land subsidence contributed much to the problems of poverty in this area, especially because people had to spend much of their financial assets on increasing the level of their house floor” (Hadipuro, 2012: 69). This makes people who do not have the resources to raise their floor level, or repair the damage on their houses, even more vulnerable (Dewi, 2007; Piguet, et al., 2011). Poverty is depending on seasons as well (Chambers, 2007), in Semarang, for example, the floods are heavier in the rainy season (Hadipuro, pc, 24-10-2013). Another problem that occurs is related to health (Baker, 2012). With

every flood, garbage is coming into the houses, which brings a lot of diseases (Hadipuro, 2012), since a lot of diseases are born in water (Barbiere & Confalonieri, 2011; Baker, 2012). Especially when there is a lack of streaming fresh water (Hygiene Council, 2008; Baker, 2012). And with infiltration of sea water, the quality of drinking water decreases (Hariwitasari & Van Ast, 2011; Barbiere & Confalonieri, 2011). Next to that, the floods also change the ecosystem which influences the people who depend on fishery (Baker, 2012). So it is made clear that floods are affecting the livelihood in several ways. Besides, the environmental changes and the changing livelihoods do have their impact on the mobility and immobility of the inhabitants of the coastal area of Semarang and their decision-making process to migrate out of the area, and especially the decision-making process to stay there. In the next part it is attempted to get a better understanding of the relation between the environmental change and the process of migration.

Environmental change and migration

It is already mentioned that the inhabitants of the coastal part of Semarang try to adapt to the subsidence, the rising sea level and the floods by building bridges, dams and dykes, and by raising the floor level of their houses. "The ability of adaptation and coping with the future risk of tidal flood is assessed by their economic resources, information and skills, infrastructures, technology and access to resources" (Harwitasari, 2009: II). However to prevent the floods for a longer period of time, the communities do not have the economic resources and the knowledge (Marfai & Hizbaron, 2011; Marfai, et al., 2008b; Mulyana, et al., 2013). And the floods occur frequently, which is very disturbing (Harwitasari & Van Ast, 2011). Environmental degradation can be seen as a push factor of migration (Hunter & David, 2011), so you would think that the people are tired of the floods, and that they would move to another part of the city or the country to get rid of it. But the relation is much more complex.

There is a long history in the relation between migration and environmental change, but research about this subject did not really exist until the late 1980s, which is quite recent (Piguet, et al., 2011; Gemenne, 2011). Nowadays there are already predictions on how environmental change will displace people as individuals, families or whole communities, but how it eventually manifests itself is not yet clear. However the scale of migration will grow, because the effects of climate change on the environment will grow as well (De Sherbinin, et al., 2011). Sometimes people are forced to migrate, however, this is mostly not the case. That is why there are still a lot of debates about how the effects of environmental change will eventually affect human communities at the physical level and at the level of responses and adaptations (Oliver-Smith, 2011). But it is clear that there exists a relation between environmental change and migration, even though it is still an exception (Hugo,

2011). People use other strategies to deal with the impact of flooding; they try to adapt in other ways (Harwitasari & Van Ast, 2011). But what is holding them back from migrating?

Aim of this research

As discussed above, the floods in the northern part of Semarang have major impacts on the lives of the inhabitants of this area. It is important to understand those effects and the question why people stay or move. So this thesis will acquire a better understanding of the effects of the floods and the link between environmental change and migration. Because of this, the research will be practical oriented. At this point the aim of this research can be formulated:

The aim of this research is to acquire an in-depth understanding of the effects of floods on the livelihoods of the inhabitants of the village Tanjung Mas in the city of Semarang, and its relation to the perception about migration, based on their (im)mobility and the decision-making process of migration.

The aim of this research is focusing on the effects of floods on the livelihood of the inhabitants of the coastal area of Semarang, in the case of this research, the neighbourhood Tanjung Mas. Those effects are also related to the (im)mobility of the inhabitants and the decision-making process to migrate or to stay in the area. For example, a changed livelihood affects the immobility and mobility, and besides, the degree of immobility and mobility influences the livelihood of people. As mentioned above, there are several reasons why people are not able to move or why there is a resistance to move. In order to achieve the aim of this research a Phenomenological Method will be used, which is focusing on the experiences of the respondents about a certain phenomenon, in this case the floods and its effects on the livelihood. This will be explained further on in Chapter 3.

Relevance

So it is clear that in the next decades the floods will affect migration patterns (White, 2011). Some people will be forced to migrate, but in most cases there are more reasons than environmental change only, that influence the decision-making process to move. There are issues of the changing livelihood that are influencing the mobility, and especially the immobility of the inhabitants of the coastal area of Semarang. People cannot escape from this silent disaster and from what will happen in the future. This is one reason that shows the relevance, especially because those people are the poorest people in the city. Politically it is relevant to study the effects of floods on migration of people who live in the coastal area of Semarang because generally policy is shaped by research (Gemenne, 2011; F. Helmy, pc, 17-10-2013). Migration and livelihood should be understood by policy

makers, for adaptation and mitigation (D. Dodman, pc, 17-10-2013). By understanding the problem, policy-makers can better deal with it (Gemenne, 2011).

In the academic field, there is only attention for the link between environmental change and migration since 1980's (Piguet, et al., 2011). According to Gemenne, there are four themes, in which way the study about the relation between environmental change and migration is lacking (2011). First, as mentioned before, there is a big focus on climate change, while also other things effect environmental change that results in migration. So more research should be done about the other issues that influence migration and what holds people back to migrate. Second, there is a lot of 'grey' literature, which provides only a practical view on the subject, but there is no theoretical viewpoint. Third, nowadays the subject is examined by different disciplines which provide different views, and sometimes those views conflict with each other. Finally, there is a lack of empirical studies about the link between environmental change and migration (Gemenne, 2011; Castles, 2011). Besides, not a lot of research is done about immobility, since research about migration is mainly focusing on migration itself, and it does not include why people are not migrating. This is why this empirical study will contribute to the academic literature about the link between migration and environmental change. The scientific relevance of the research is as well, that it contributes to the knowledge about the Sustainable Livelihood Approach, Threshold Approach, and the Theory of Planned Behavior. These three approaches are combined in this thesis to reach the aim of this research. The combination of these models in one research will contribute to the academic field, in order to understand the theories and to understand their interrelations. Next to that, after the theories are used to analyze the experiences of the respondents, the outcomes are fed back to the theories, and possible improvements of the theories will be described. Which you can read in the concluding chapter.

Main- and sub-questions

At this point it is clear what the aim of this research is and why it is relevant to achieve this aim. In this part of the introduction the main- and sub-questions will be formulated. The main-question which follows from the aim of this research is:

What are the effects of floods on the livelihoods of the inhabitants of Tanjung Mas, Semarang, and how is this related to their perception about migration?

In order to answer this question and to achieve the aim of this research, the main-question will be divided into four sub-questions. The first sub-question will be answered in order to understand the way in which the respondents experience the floods:

How do the inhabitants of Tanjung Mas, Semarang, experience the floods?

Next to that, the effects of the floods on the livelihood of the inhabitants of Tanjung Mas, Semarang, will be discussed. The second sub-question is:

How are the floods affecting the livelihoods of the inhabitants of Tanjung Mas, Semarang?

The third sub-question addresses the perception about migration of the inhabitants of Tanjung Mas, by the immobility and the decision-making process, related to the changed livelihoods because of the floods. As mentioned before, a changed livelihood can influence the mobility and immobility of people, for example because of a lack of resources. On the other hand, when people are immobile, that will affect the livelihood. They are obligated to stay in the area in which the physical surrounding decreases in quality, so their livelihood will decrease as well. Besides it is also important to understand the decision-making process to migrate or to stay. If the livelihoods are changing, this will influence the intention to move, and the eventual behavior. This can be in both, positive and negative ways. So the third sub-question is:

What is the interrelation between the livelihoods which are affected by floods, and the perception of migration by the inhabitants of Tanjung Mas, Semarang?

After this introduction in Chapter 1, the theoretical framework will be explained in Chapter 2. In Chapter 3 the used methods to achieve the aim of this research will be discussed. An explanation of the research area and the occurring environmental changes in the area can be found in Chapter 4. Chapter 5 will address the background factors and the experiences of the inhabitants of the floods in their neighbourhood. In Chapter 6 you can find the effects of the floods on the changing livelihoods. And in Chapter 7 the (im)mobility and the decision-making process to migrate or to stay will be discussed in order to understand the perception on migration. In Chapter 8 you can read the conclusions and a reflection on this research.

2. Theory

To achieve the aim of this research, several theories will be described and combined to acquire an in-depth understanding of the interrelation between the livelihood which is affected by floods, the (im)mobility of the inhabitants and their decision-making process to migrate or to stay. First the relation between environmental change and migration will be discussed. Second, the Livelihood Approach, third the Threshold Approach and fourth the Theory of Planned Behavior. There will be discussed in what ways the several theories are useful in this thesis, and in the end the three approaches will be combined in a conceptual model.

Environmental change and migration

There is a long history in the relation between migration and environmental change, but research about this subject did not really exist until the late 1980s, which is quite recent (Piguet, et al., 2011; Gemenne, 2011). According to Piguet, Pécoud and De Guchteneire (2011), there are three main outcomes of environmental change that can influence migration. The first one is drought and desertification. This happens mainly in Africa, South America, the Middle East and Central and Southern Asia, but the link between droughts and migrations stays highly contextual and difficult to estimate (Piguet, et al., 2011). This kind of environmental changes occur in Indonesia, however, they are not a big problem in Semarang. The second one is the rapid-onset phenomenon, which include tropical cyclones, heavy rains and floods. The location of those phenomena is hard to predict. Most of the times, in a country where such a disaster has happened, people do not choose for a long-term or long-distance migration, they stay close. Not only because they do not want to, but mainly because it happens to poor people, who do not have the resources to move (ibid.). This is one of the events that also happen in Semarang, the heavy rains come suddenly and most of the time they are gone quickly as well. The third outcome of environmental change that influences migration is the rising sea level, and the link between this effect of climate change and migration appears much more straightforward, which happens a lot in coastal areas and island states (ibid.). Rebetz argues as well that the rising sea level is one of the main environmental changes that can cause human displacements (2011). And the rising sea level is one of the major environmental problems in the coastal area of Semarang, because it is one of the factors that cause the daily tidal floods. It is not a shock event, but it is like a silent disaster.

Nowadays there are already predictions on how environmental change will displace people as individuals, families or as whole communities, but how it eventually manifests itself is not yet clear. However the scale of migration will grow, because the effects of climate change on the

environment will grow as well (De Sherbinin, et al., 2011). Sometimes people are forced, this includes most of the time poor people, because they are most vulnerable (Hugo, 2011; World Bank, 2010; Jha, et al., 2010). But forced migration is not always the case. So there are still a lot of debates about how the effects of environmental change will eventually affect human communities at the physical level and at the level of responses and adaptations (Oliver-Smith, 2011). What is known, is that most migration is internal, so it takes place within the country (Hugo, 2011; Koser, 2011; Foresight, 2011; Baker, 2012)

Migration is depending on the vulnerability and the possibility to adapt, and is affected by political, economic and social processes on a local, regional, national and international scale (Oliver-Smith, 2011). Next to that, environmental change is mostly only one of many factors to move (Piguet, et al., 2011; McAdam, 2011; Warner, et al., 2011; Hugo, 2011). This contributes to the fact that some academics have a critical perception on the relationship between migration and environmental change (Findlay & Geddes, 2011). Because most migration occurs also in order to get a better economic situation (Hugo, 2011). However, environmental change is influencing economic, social and health problems. So it has an indirect influence on migration as well (Piguet, et al., 2011; Foresight, 2011). Next to that, it is not only the environmental change which is important, but also the perception of the environmental change which influences the choice for migration (Piguet, et al., 2011). If people do think that environmental change is not disturbing, they will not move.

Despite the fact that there exists a relation between environmental change and migration, migration is still an exception. "Too often it is assumed that severe environmental impact must result in displacement, but the adaptation process is much more complex" (Hugo, 2011: 260-261). This is also the case in Semarang. "The flooding here is usually not high enough to endanger human lives" (Harwitasari & Van Ast, 2011: 1), it is just influencing their lives slowly. "In both the existing and the predicted flood prone areas, most people appear not to intend to leave the area, even when the floods become everyday routine" (Harwitasari & Van Ast, 2011: 1). That is why some people say that migration only occurs when other forms of adaptations are not possible anymore, migration is an exception (De Sherbinin, et al., 2011). People use other strategies to deal with the impact of flooding; they try to adapt in other ways (Harwitasari & Van Ast, 2011). But migration does not have to be the worst case scenario, it is most cases an adaptation itself, a survival technique (Piguet, et al., 2011; Barbieri & Confalonieri, 2011; Oliver-Smith, 2011).

If the land of the community is occupied by the sea, it is necessary to migrate, but if this is not the case, there are other things possible to adapt or mitigate. "Mitigation is a form of adaptation that concerns itself with impact minimizing strategies to minimize loss and facilitate recovery" (Oliver-Smit, 2011: 14). New technologies can be the solution, compared with social organizations (Oliver-Smith, 2011), because together you can do more, it depends on collectivity (Adger, 2003;

Baker, 2012). Next to that, climate change is experienced differently around the world, because of differences in socio-economic circumstances that determine the vulnerability (Piguet, et al., 2011). So climate change certainly has its impact on human migration, but it does not automatically lead to displacements. But why does it not? In some cases there is a resistance to migrate as well, depending on several reasons. For example, people do not have enough resources, there is only inappropriate land in the destination area, and conflicts can occur with local population in the new environment (Hugo, 2011). Next to that, the emotional bounds to the area and community where people live are very strong (Hugo, 2011). It is also for that reason, that “social system characteristics including social networks play a mediating role in how environmental change affects whether people move away or stay at home” (Warner, et al., 2011: 188).

If people do migrate, there are a lot of difficulties they have to face, or which people think they have to face, which is holding them back from migrating. There is an injustice of inadequate resettlement, since resettlement itself is already expensive (Oliver-Smith, 2011; De Sherbinin, et al., 2011). And next to that:

“environmentally displaced people will face a complex series of events most often involving dislocation, homelessness, unemployment, the dismantling of families and communities, adaptive stresses, loss of privacy, political marginalization, a decrease in mental and physical health status and the daunting challenge of reconstituting livelihood, family and community” (Oliver-Smith, 2011: 181-182).

It is not only the household that is displaced which suffers, but the host and the residential population are affected as well (World Bank, 2010). There is a loss of the social cohesion of the community and the network, which is the basis of the personal and social identity, so the cultural identity of the people who move, and the people who stay behind will change as well (Oliver-Smith, 2011). All those consequences are preventing people to migrate.

Livelihood Approach

In the 1970s and 1980s there was a primary focus on Neo-Marxism and the Dependency Theory (De Haan & Zoomers, 2005). Those approaches were already focusing on the inequalities in the distribution of power and poverty, but they had a main focus on economic concerns and they did not recognize that people themselves have an important influence (De Haan & Zoomers, 2005). “Such an approach ignores the multidimensionality of the experience of poverty and the institutional dimensions associated with solutions” (Beall & Kanji, 1999: 6). The livelihood approach did emerge as a response to those lacks of the former approaches (De Haan & Zoomers, 2005; Rakodi & Lloyd-

Jones, 2002; Norton & Foster, 2001; Farrington, Ramasut & Walker, 2002; Beall & Kanji, 1999). It addresses the inequalities as well, but it does not view the economic concerns as a primary importance and next to that, it recognizes that people make their own histories (De Haan & Zoomers, 2005). A part of the Livelihood Approach is the Sustainable Livelihood Approach, which focuses on livelihoods that are able to maintain or increase its assets and capabilities for future generations, provide sustainable livelihood opportunities, can cope with, and recover from stress and shock, and benefit other livelihoods at the global and local level, on the short and long term (Chambers & Conway, 1991; Hadipuro, 2012; Carney, 1998; Meikle, Ramasut & Walker, 2001). In this research it is therefore attempted to understand in what extent the livelihood of the inhabitants of Tanjung Mas is sustainable, and to what extent they deal with the impact of the floods. “This new actor-oriented perspective was mostly interested in the world of lived experience, the micro-world of family, network and community” (Johnston, 1993: 229, in: De Haan & Zoomers, 2005: 28). Besides, it is a holistic and dynamic approach, in the way it acknowledges that there are several influences and outcomes, and that the livelihood is changing all the time (Albu & Scott, 2001; Carney, 1998; Farrington, et al., 2002; Murray, 2001). And next to that it is a more positive approach:

“While many household studies ended in rather pessimist conclusions, showing how poor households were increasingly excluded from the benefits of economic growth and thus marginalized, in the early 1990s a new generation of more optimistic household studies appeared, which approached households from a livelihoods perspective and showed how people are able to survive” (De Haan & Zoomers, 2005: 29).

The perspective focuses on surviving, so in this concern, concepts like poverty, adaptation and vulnerability are important in examining these local actors, mostly households (De Haan & Zoomers, 2005). Livelihood studies, as they are known today, emerged in order to understand the lives of poor people and it was first advocated by Chambers and Conway in 1992 (ibid.). “In their interpretation, a livelihood refers to the means of gaining a living” (ibid.), which is where most scholars agree on when it is about the definition of livelihoods (Chambers & Conway, 1991; De Haan & Zoomers, 2005; Hadipuro, 2012). And in order to make a living, people need to have assets and capabilities (Chambers & Conway, 1991; Hadipuro, 2012). According to Chambers and Conway, there are two kinds of sustainability in livelihoods, social and environmental (1991). “Environmental sustainability deals with the external impact of a certain household’s activity to maintain its livelihoods on other households’ livelihoods, while social sustainability refers to the internal capacity to withstand outside pressure” (Hadipuro, 2012: 14). In the case of Semarang it is important to look at the environmental

impacts like the floods and land subsidence on the livelihood of the inhabitants of the coastal area of Semarang and their ability to deal with those pressures.

Sustainable Livelihood Analysis is mostly originated in studies on rural areas, but nowadays it can be applied to urban areas as well (Hadipuro, 2012; Hadipuro, et al., 2013; Beall & Kanji, 1999; Farrington, et al., 2002; Rakodi & Llyod-Jones, 2002). The analyses of livelihoods can be at different scales, from macro to micro and everything in between, but it is most common at the level of the household (Chambers and Conway, 1992; De Haan and Zoomers, 2005; Murray, 2001). "A household is commonly defined as a person or co-resident group of people who contribute to and/or benefit from a joint economy in either cash or domestic labour that is a group of people who live and eat together" (Rakodi & Llyod-Jones, 2002, in: Hadipuro, 2012: 14). It can include family, close and wider kind networks, and unrelated co-residents (Beall & Kanji, 1999). However, it is important to keep in mind that the situation of the livelihood of poor people on the micro-level in urban areas is depending on a much broader macro level context (Rakodi & Lloyd-Jones, 2002; Murray, 2001). They are influenced by global and local social, economic, and political networks and systems (Cannon, Twigg & Rowell, 2003). In this research several individuals will be examined in the level of the household and the neighbourhood.

Within the Sustainable Livelihood Approach it is important to acknowledge that people are central and that they are the starting point of the analysis (Albu & Scott, 2001; Carney, 1998; Farrington, et al., 2002; Murray, 2001). "It offers a look at the real world by understanding things from local perspectives of such people" (Hadipuro, 2012: 4). Further, it is an holistic approach, so it is not restricted by boundaries and it explores multiple actors, influences, strategies and outcomes that create people's livelihoods (Albu & Scott, 2001; Carney, 1998; Farrington, et al., 2002; Murray, 2001). Next to that, the approach is dynamic, in the way that it understands the fact that the things that influence the livelihood are always changing (Albu & Scott, 2001; Carney, 1998; Farrington, et al., 2002). And, within the Sustainable Livelihood Approach a principle is, that it should be acknowledged that it is possible for people to build on their own strengths to achieve a better life (ibid.).

Vulnerability

To get a full understanding of the livelihood of people in the coastal area of Semarang it is important to understand their vulnerability. Livelihood analyses were initially intended to understand the lives of the poor. In cities "The poor move in and out of relative poverty as they respond to the opportunities, shocks and stresses - social, economic and environmental - which they experience" (Meikle, et al., 2001: 1). This makes vulnerability an important concept in understanding sustainable livelihoods (ibid.). Vulnerability is not the same as poverty, but poverty is one of the ways to measure vulnerability (Cannon, et al., 2003). Because poor people live on the most vulnerable land and have

the most vulnerable life, which makes the environmental risks bigger (Baker, 2012). They will suffer the most in almost all cases (Marcotullio, 2007). This is also the case in Tanjung Mas, since the poorest people live in the coastal area with generally ten centimeters land subsidence every year. Socio-economic reasons make people vulnerable and improvement in the livelihood decreases vulnerability (Cannon, et al., 2003). Keep in mind that there is always a multidimensional perspective on poverty (Beall & Kanji, 1999).

The vulnerability context is the starting point of Sustainable Livelihood Analysis (Nicol, 2000; Norton & Foster, 2001). Vulnerability analysis is “a way of conceptualizing what may happen to an identifiable population under conditions of particular risks and hazards” (Cannon, et al., 2003: 4). However, long term environmental changes are important as well. The way environmental changes have impact on people can not only be understood by looking at the environmental change itself, but it is also important to understand if a population is able to prepare before, and recover after a sudden environmental event, or to adapt during long term environmental change (Cannon, et al., 2003), to cope with, and recover from stress and shocks (Hadipuro, 2012). This possibility to cope with, to prepare and to recover is the most important part of the concept of vulnerability (Hadipuro, 2012). Shocks affect the vulnerability and are hard to predict, long term trends, as the floods in Semarang, are easier to predict (Hadipuro, 2012; Hadipuro, et al., 2013), which should make it easier to prepare or adapt.

The classical definition of vulnerability is formulated by Moser (1998 In: Hadipuro, 2012). He “defines vulnerability as insecurity and sensitivity in the well-being of individuals, households and communities in the face of a changing environment, and implicit in this, their responsiveness and resilience to risks that they face during such negative changes” (Hadipuro, 2012: 15). As becomes clear out of this definition is that vulnerability is influenced by the external situation, like the floods and the land subsidence in the case of Semarang and the internal situation, and how the inhabitants of the coastal area of Semarang can adapt to the situation (ibid.). This shows the link with the sustainable livelihood, which is also influenced by the external and internal situation, as mentioned above. It is important to mention that there are different kinds of vulnerability in cities and rural areas. In cities there is especially a vulnerability in health, safety and personally, while in the rural areas the vulnerability is more seasonal (Farrington, et al., 2002). And since cities and populations are always changing, vulnerability should also be understood as a dynamic concept (D. Schensul, pc, 17-10-2013), which is an important point in the Sustainable Livelihood Approach as well.

Sustainable Livelihood Approach

The degree of vulnerability is closely linked to the access to and/or ownership of several assets, which can be distinguished in natural, physical, human, financial, and social assets (Chambers &

Conway, 1991; Hadipuro, 2012; Hadipuro, et al., 2013; Carney, 1998; Meikle, et al., 2001). In Box 1 the explanations of the different kinds of assets can be found. These assets are at the heart of the Sustainable Livelihood Framework (Nicol, 2000), which is shown in Figure 1. The assets determine the vulnerability just as the vulnerability context that influences these assets. These contexts are the trends, shock and local cultural practices (Carney, 1998). Together with understanding the capabilities of people (the ability to do something with their resources), and the activities which are needed to make a living, the sustainability of the livelihood can be represented (Chambers & Conway, 1991; Hadipuro, et al., 2013; Carney 1998).

Box 1: Capital assets

- **Natural capital:** the natural resources stocks from which resource flows useful for livelihoods are derived (e.g. land, water, wildlife, biodiversity, environmental resources)
- **Social capital:** the social resources (networks, membership of groups, relationships of trust, access to wider institutions of society) upon which people draw in pursuit of livelihoods.
- **Human capital:** the skills, knowledge, ability to labor and good health important to the ability to pursue different livelihood strategies.
- **Physical capital:** the basic infrastructure (transport, shelter, water, energy and communications) and the production equipment and means which enable people to pursue their livelihoods
- **Financial capital:** the financial resources which are available to people (whether savings, supplies of credit or regular remittances of pensions) and which provide them with different livelihood options.

(Adapted from Carney, 1998: 7)

In Chapter 6, the analyzing chapter about the effects of the floods on the livelihoods of the inhabitants of Tanjung Mas. These assets will be used as a guideline to understand the livelihoods and their vulnerability. The social asset is based on the social relations and networks on which the inhabitants can build during problems with the floods. In this thesis, the neighbourhood, the family and the government are taken as the main social relations, since they can offer help during periods of flood. The human asset is based on the mental and physical abilities of the respondents themselves to cope with the floods. This asset is divided into education and health. Education since it provides people of knowledge, and health because the floods can have major effects on the health of the people, and their eventual decision to migrate or not. The physical asset contains the basic

infrastructure and ownership of the respondents. In this research this is divided into the house, since it is the most important ownership of the respondents, and belongings. Next to that, the roads, and water and electricity are discussed, because they are the basic infrastructures that are important for the people in the neighbourhood. The financial asset is about the resources people have, which are their jobs and their savings in this thesis. This determines how much money people have to protect themselves. Protection therefore is also related to the financial asset, but this is intertwined in analyses of the other assets. The natural capital is not used in the analyzing chapters, since in the case of the floods, things as wildlife and biodiversity, do not play a role in the livelihood of the inhabitants. Besides by using this model, the lines between the different assets are very static, while probably there exists a lot of correlation between the different assets.

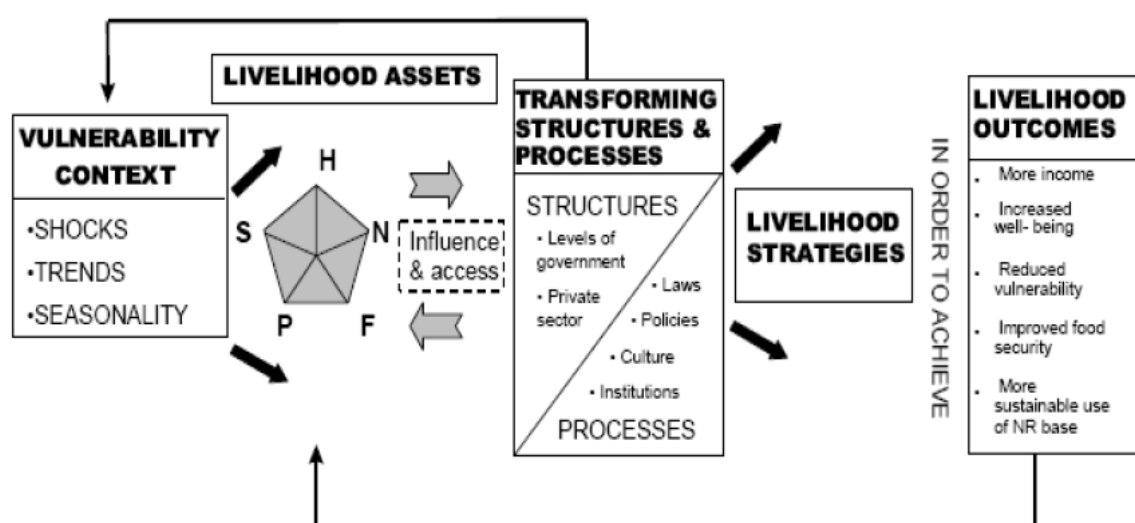


Figure 1: Sustainable Livelihood Framework (Carney, 1998: 5)

The second part of the framework, as shown in Figure 1, contains the transforming structures and processes that influence the vulnerability context and the access to the different assets (Farrington, et al., 2002). These assets are important to understand the degree of the impacts of environmental change (Baker, 2012). The structures and processes are related to the policies and institutions that cover the social, economic, environmental and mainly the political factors that determine the livelihood (Farrington, et al., 2002). The laws and policies are relevant at all different levels, from individual to global (ibid.). The third part of Figure 1 focuses on the livelihood strategies. “Livelihood strategies are the planned activities that households undertake to build their livelihoods” (Hadipuro, 2012: 19), and to improve the circumstances on a long term, in order to survive and to improve their livelihoods (Hadipuro, et al., 2013).

The fourth of the Sustainable Livelihood Framework (Figure 1) are the livelihood outcomes. The livelihood strategies attempt to achieve positive livelihood outcomes that can increase the well-

being and decrease the vulnerability (Hadipuro, 2012). However it is important to understand that people are not always able to achieve positive livelihood outcomes (Carney, 1998), so this can lead to a negative vicious circle.

There are two major challenges of the sustainable livelihood approach and its framework. The fact that a lot of the livelihood opportunities are governed, so gaining access to them is difficult for the people themselves (De Haan & Zoomers, 2005). Next to that there is the challenge of decision-making, since access to livelihood assets and opportunities has its influences on decisions, but how these decisions will be made is not exactly known (ibid.). It is not yet telling something about the decision to move or to stay. As already mentioned before, the livelihood approach acknowledges that people have their own role in achieving a sustainable livelihood, so somehow people can make their own decision (ibid). This decision-making process will be addressed later within this chapter with the theory of planned behavior. However, this model is definitely useful to acquire an in-depth understanding of the effects of floods on the livelihoods of the coastal inhabitants of Semarang. The floods can be seen as the external vulnerability context that influence the assets and the access to those assets of the people. So finally, by doing research in the area, by conduction interviews and observations, it is tried to relate the framework to the specific area of Tanjung Mas. However, it is important to keep in mind that only some parts of the model are useful for this research. So after the analyzing chapters some adaptations on the model will be explained, how it will be best fitted to this research in combination with the other models.

In this research the livelihood assets are the most important part of the Sustainable Livelihood Framework. In order to acquire an in-depth understanding of the effects of the floods on the livelihood of the inhabitants of Tanjung Mas, Semarang, and to determine their vulnerability. If we understand their vulnerability and the way in which the floods effect their vulnerability, it will be able to get a better understanding of the mobility of the people as well. So we will know why people prefer to stay in Tanjung Mas, even though the environmental circumstances are becoming worse.

Threshold Approach

The Threshold Model, as in Figure 2, is developed by Van der Velde and Van Naerssen. It was initially focused on cross-border labor migration in and to the European Union. But despite the fact that this thesis is not initially focused no labor migration, the immobility aspect of the approach will be useful during this research. Since immobility has a more determining role than mobility when we speak of migration (Van Houtum & Van der Velde, 2004). Next to that, this research will not explore the immobility to certain destinations, as in the original Threshold Model (Van der Velde & Van Naerssen, 2011), but it will take a look at the immobility to move at all.

This model was developed as a complement to the Neo-Classical Push-and-Pull Model (Van der Velde & Van Naerssen, 2011), which is criticized because it assumes that people act as rational individuals (Kitchin, 2006), and that mobility is based on seeking for the highest profit, no matter where that is (Van Houtum & Van der Velde, 2004). The Threshold Approach takes into account that decisions of people are not fully economically rational, because there are also other issues that influence their decision (Van der Velde & Van Naerssen, 2011). For example, rationality is also related to the capability to gather relevant information and to the social environment (Van Houtum & Van der Velde, 2004). Next to that there should be more attention to the question why people stay, instead of only focusing on why they move (Van der Velde & Van Naerssen, 2011). There are several reasons that keep people living in an area, like differences in culture, or the fact that people are strongly embedded in their residential area and that they feel comfortable living there (ibid.). Besides, the model also includes repel factors, which are factors that deterred people from moving to another place (ibid.). These push, pull, keep and repel factors are shown in the model in Figure 2.

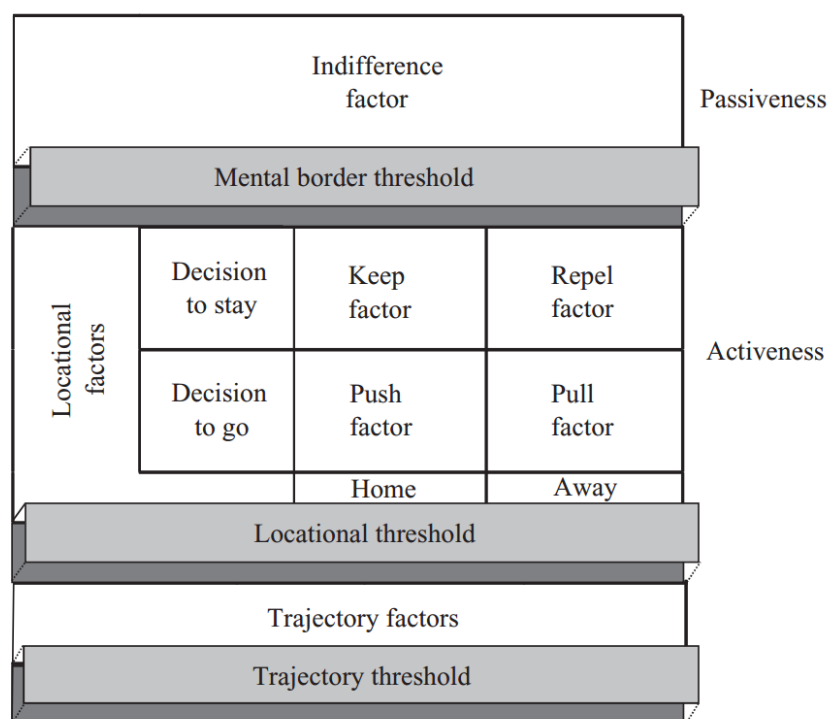


Figure 2: Threshold Model (Van der Velde & Van Naerssen, 2011: 222)

Most of the former models were focusing on actors that are thinking about migration already, while before that stage there is a much more important passiveness among actors in which they do not even think about migration as an option (Van Houtum & Van der Velde, 2004). The most important and useful part of the model for this thesis is therefore the stage of indifference. Before people

become active to make a decision whether to migrate or not, there is a stadium of indifference (Van der Velde & Van Naerssen, 2011). However, it is still important to question if people really did not think about migration at all, or if they did think about it, but that they putted these thoughts away again. It is important to understand that it is overestimated that there exists a willingness to move, and thereby that there is more non-action compared to action (Van Houtum & Van der Velde, 2004). In this stage, the concept of belonging plays an important role. "This idea is connected to the importance for people to belong somewhere or to feel at home in a specific locality or region" (Van der Velde & Van Naerssen, 2011: 221). It creates a mental border between 'here' and 'there' (ibid.). In which people feel a certain belonging to a place, in this case Tanjung Mas. However these values, norms and knowledge about feeling belonged to a certain habitat are mostly internalized (Van Houtum & Van der Velde, 2004). This means that people do not know themselves that this is a salient factor in their immobility. Most people will not mention their feeling of belonging to Tanjung Mas, however, it will become clear when they talk about their social and economic relation to the neighbourhood. So before people undertake action to start thinking about the possibility to move, they have to cross this mental border threshold. This also makes clear why social networks are important in migration, because family and friends determine the feeling of belonging (Van der Velde & Van Naerssen, 2011).

After crossing this first barrier, people enter the stage of difference, in which they begin to think about making a decision to move. However this is mostly only a very small part of the population, because most of the people will stay passive and will not even consider mobility (Van Houtum & Van der Velde, 2004). This part of the model is already explained above. When after considering the different possibilities, and people decide to move, they cross the locational threshold (Van der Velde & Van Naerssen, 2011). Finally there are several trajectory factors that determine the route migrants take, which can change their route or prevent mobility, which is called the trajectory threshold (ibid.). However, these trajectory factors are not important in this thesis, since the respondents in this thesis will not migrate. It is important to understand that in order to cross a certain barrier, there is always an indifference factor. This determines if people even think of migration at all, if they think of all locations and all routes and not just a few (ibid.). This knowledge has a great influence on crossing the thresholds and on the decision-making process.

Theory of Planned Behavior

In order to understand the effects of the floods on the eventual decision to move or to stay, it is important to examine the reaction of people on the floods and the changes in their livelihoods. This can be done by taking a look at the behavior of the inhabitants of the coastal area of Semarang. However, there are several factors that can influence actual behavior. The Theory of Planned

Behavior, developed by Icek Ajzen in 1985, is an action theory which provides some thoughts and a model to explain the behavior of people in certain situations (Ajzen, 1991; Ajzen, 2005; Bamberg, et al., 2007). Even before the Theory of Planned Behavior was developed, Ajzen and Fishbein were already focusing on predicting and understanding human behavior (1980). This thesis is mainly interested in understanding human behavior. By looking through the perspective of the Theory of Planned Behavior it is tried to acquire an in-depth understanding of the behavior of the inhabitants of the northern part of Semarang and to understand their decision and the process of decision-making to stay or to move. The theory is related to the Behavioristic Approach. This approach emerged as a response to the need to get a better understanding of relations between humans and the environment, and it offers a perspective to understand the process of spatial actions and decision-making, before people act (Golledge, 2006). So it focuses on processes rather than a static form, by looking for example at the perceptions of people, their learning process, how their attitudes are formed and how they memorize things (ibid.). Just like in the Theory of Livelihoods and in the Threshold Approach, people are central in the theory of planned behavior

Many researchers assume that there are different causes for different kinds of behavior, but there is little agreement on which factors are crucial in determining behavior (Ajzen & Fishbein, 1980). According to the Theory of Planned Behavior, the intention to perform certain behavior does directly determine the behavior of people (Ajzen & Fishbein, 1980; Bamberg, et al., 2007). In this way, people are expected to do what they intend to do (Ajzen, 2005). The “intention is viewed as a summary of all the pros and cons a person takes into account when deliberately reasoning whether he/she should perform a behavioral option or not” (Bamberg, et al., 2007: 191). It indicates the willingness to act in a certain way (ibid.), so in the case of Semarang, it indicates if people are willing to move or not, and why this is the case. Ajzen mentions three concepts that are causing the intention; attitude towards the behavior, the subjective norm, and perceived behavioral control (Ajzen, 1988; Bamberg, et al., 2007). Below, in Figure 3 the model and its relations of the theory of planned behavior is shown.

The first concept refers to the attitude towards behavior which is about the feeling of the preference of certain behavior (Bamberg, et al., 2007). This concept is a personal variable, which means that it is about the individual’s attitude, influenced by its own positive or negative evaluation of performing particular behavior (Ajzen, 2005). The attitude can be discovered by looking at a combination of verbal and nonverbal responses that show beliefs and feelings (ibid.). In the case of Semarang, it is tried to understand how people think about migration themselves. The second concept, which is called the subjective norm, is reflecting the social influence on the intention (ibid.). It “is a person’s expectation that important reference persons think she/he should or should not carry out that option” (Ajzen, 1991). In this sense it deals with perceived normative prescriptions

(Ajzen, 2005). In Tanjung Mas it is tried to acquire a better understanding of the social factors that influence the decision to move or to stay. For example the relation with the neighbours, but other social norms and values that underlie in the Indonesian culture as well.

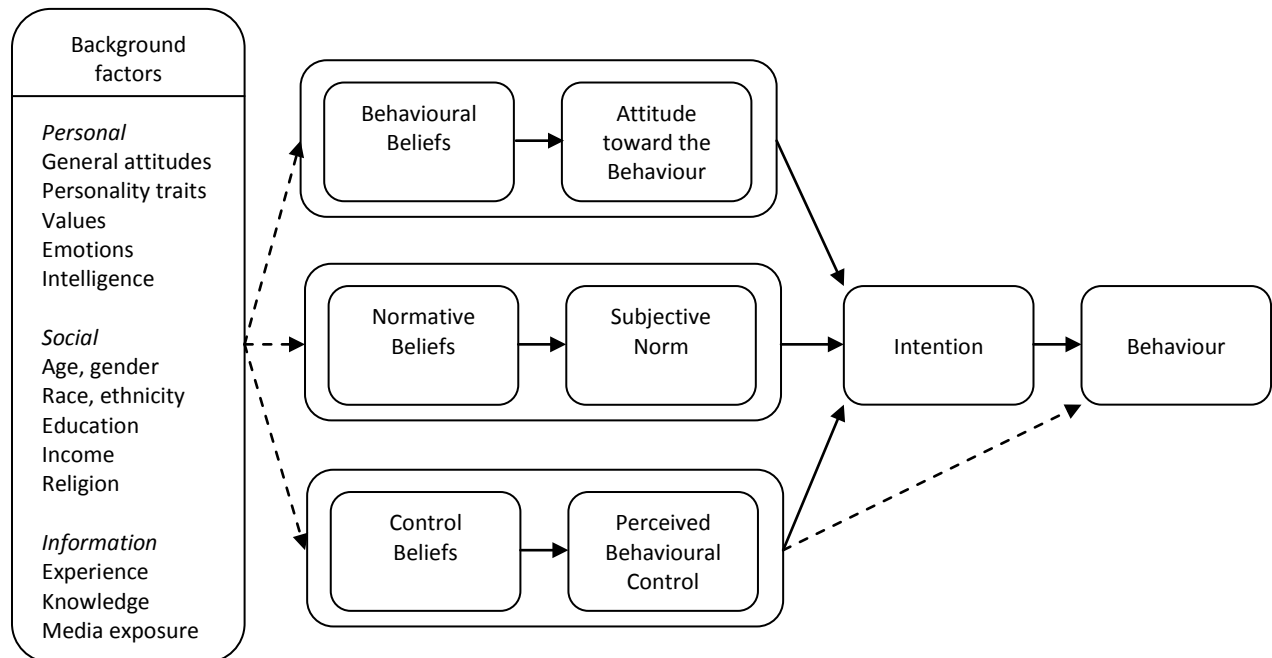


Figure 3: Theory of Planned Behavior (Ajzen, 2005: 135)

The third concept is the perceived behavioral control, which is dealing with issues of control (Ajzen, 2005; Bamberg, et al., 2007). Some people fail to perform behavior, even if they intent to do so, because there are many factors that interrupt the relation between the intention and behavior (Ajzen, 2005). “Collectively, these factors represent people’s actual control or lack of control over the behavior” (Ajzen, 2005: 110). For example the economic situation of the people and the feeling of control of the municipality of Semarang. So when it is tried to understand behavior, it is important to understand in which matter people have their own control about behavior as well, and how they perceive this control (ibid.). So it refers to the ability to perform certain behavior, because of internal and external controls (ibid.). The perceived behavioral control is not only affecting the intention to perform behavior, but it is also directly influencing behavior itself (Bamberg, et al., 2007).

“However, for a more complete understanding it is necessary to explore why people hold certain attitudes, subjective norms, and perceptions of control over a behavior” (Ajzen, 2005: 123). The attitude is influenced by the behavioral beliefs (Figure 3), which is determined by a person’s evaluation of the outcome (ibid.). It is about how the individual perceives the link between behavior and the desired outcome, not about the actual link. It reflects the belief about the consequences, and the values a person ascribes to those consequences (Bamberg, et al., 2007). The subjective norm

is influenced by normative beliefs, which is the belief of the individual about what other individuals or groups approve or disapprove (Ajzen, 2005). Especially persons who are important for the individual, like the family or community. Experts have a big influence on the social context of the normative belief as well (ibid.). But it is not the (dis)approval itself, but the belief of the individual if other persons would (dis)approve the behavior. The perceived behavioral control is influenced by control beliefs. "Beliefs about the presence or absence of factors that facilitate or impede performance of behavior" (Ajzen, 2005: 125). This can be based on experiences of the past, but it is mostly influenced by second-hand information (ibid.). These beliefs do not have to be true or relevant, but when an individual formed such beliefs it will influence the eventual behavior, because it "leads to the perception that one has or does not have the capacity to carry out the behavior" (Ajzen, 2005: 125). With these beliefs, the connection with the Threshold Model can be made, since the thresholds, and the push, pull, keep and repel factors, are influenced by the perception and beliefs of the inhabitants about migration. Next to those beliefs, there are background factors that are influencing the three determinations of the intention to perform a behavior (ibid.). These background factors are divided in personal, social and information factors (ibid.). In Figure 3 the variables that shape this background factors are shown.

It is important to acknowledge that there is a lack of consistency in every kind of behavior in different situations and by different people (Ajzen, 2005). This is a very complex problem, because no predictions of behavior can be done for different people in different situations (ibid.). In this thesis the focus is on understanding behavior. However, this thesis will take a look at the probability to migrate as well, which is related to predicting behavior. In that sense, it is important to acknowledge the problem of consistency, so not one general conclusion can be made, just as predictions of all behavior, since all people will act differently. So the Theory of Planned Behavior will be used to get a better understanding of the decision-making process to move out of Tanjung Mas, but especially the decision to stay in the area, even though the bad environmental conditions. To explain how people themselves think about migration, but to understand the role of social and normative factors as well, together with their perception of possible control on their plans to migrate. Besides the changed livelihood, floods play an important role in the decision-making process as well. It will be tried to understand, by using the Theory of Planned Behavior, in what sense this influences their decision to migrate or to stay.

Conceptual Model

At this point the concepts of the aim of this research are theoretically explained. The Livelihood Approach will be helpful to acquire an in-depth understanding of the effects of the floods on the livelihoods of the inhabitants of the coastal area of the city of Semarang. Especially the livelihood

assets will be helpful to determine the vulnerability of the inhabitants, in order to, as mentioned before, get a better understanding of the perception about migration of the people as well. The Threshold Approach and the Theory of Planned behavior contribute to this part of the research aim. First the Threshold Approach to get more information about the interrelation between (im)mobility and the livelihoods that are influenced by the floods. Next to that the Threshold Model can contribute to the understanding of the ability and willingness to move. Sometimes people want to move, but they are not able to move because of several circumstances, for example a lack of resources. And as mentioned in Chapter 1, on the other hand, when people are immobile, that will affect the livelihood, since it decreases their vulnerability assets. Because most of the time people will not migrate out of Tanjung Mas, the stage of indifference of the Threshold Model is very useful for this research. The Theory of Planned Behavior makes it possible to find out why people want to migrate, or why they decide to stay in the case of Tanjung Mas, Semarang. To understand their own view on migration, but the social norms and values that influence the decision as well. It is attempted to describe all those different factors that influence the decision to migrate or to stay, in order to know why most of the people stay in Tanjung Mas, and in what way the livelihood influences this decision. Besides, the decision-making process is influencing the livelihoods as well, because if people decide to move, this will change their livelihood on the new place, but the livelihood of the community that is left behind as well. Another interesting point to understand would be in what way the decision to stay affects the current livelihoods of the respondents. However, this relation will not be discussed explicitly, but will just being mentioned shortly during the analyzing chapters.

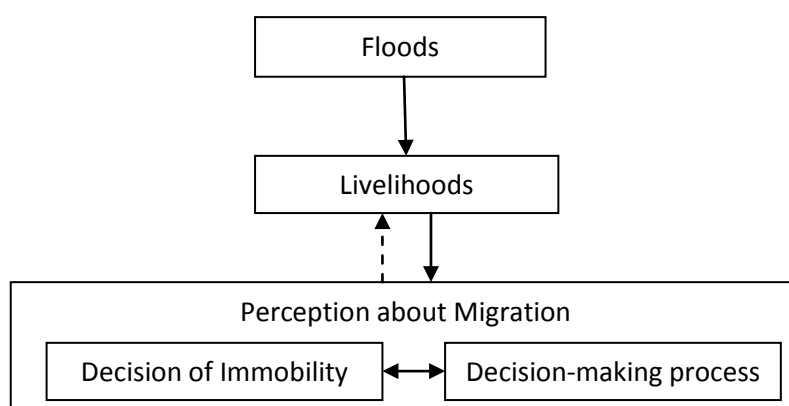


Figure 4: Conceptual model

The conceptual model in Figure 4 shows the interrelations between the different concepts, with livelihoods as a central concept. The model provides a perspective through which the aim of this research will be achieved. By applying the model, an in-depth understanding can be gathered about the effects of the floods on the livelihoods and its relation to the perception about migration, by the

(im)mobility and the decision-making process to migrate or to stay, of the coastal inhabitants of the city of Semarang. The model starts with the floods, which influence the livelihoods of the inhabitants of Tanjung Mas. The experiences of the floods and the effects on the livelihoods will be discussed in answering the first and second sub-questions. Next to that, there are the interrelations between livelihood and the perception on migration, by looking at the (im)mobility, and livelihood and the decision-making process. The third sub-question will address these interrelations.

3. Methodology

At this point it is known what will be examined and which theoretical perspective will be used. However, to achieve the aim of this thesis, it is important to explain which methods of doing research will be used. The aim of this research is to get an in-depth understanding of the inhabitants of the coastal area of Semarang. A qualitative research method is, in this case, most useful to acquire an in-depth understanding. As already mentioned before, research will be done in one particular neighbourhood in Semarang; Tanjung Mas. The choice for this neighbourhood will be explained in Chapter 4.

Phenomenology

The method used for this research is the Phenomenological Approach. "A phenomenological study describes the meaning for several individuals of their lived experiences of a concept or a phenomenon" (Creswell, 2007: 57), in this case the floods. By collecting data from individuals it is tried to understand what the actors experience and how they experience it (ibid.). A phenomenon is only perceived and understood in the context of the experience of the individual (ibid.). So the approach is based on the distinction between knowledge and subjectivity, and thereby taking the personal perspective of the actor as a starting point. That is why this method provides a way to gain insights of people's motivations and actions of certain behavior (Lester, 1999). This research will specifically use the transcendental phenomenology method, also called empirical phenomenology, in which the researcher describes the experiences of the participants (Moustakas, 1994; Creswell, 2007), rather than explaining it (Lester, 1999). In this type of phenomenology it is tried to set aside the experiences of the researcher him/herself in order to start with a fresh perspective (Creswell, 2007). However, it is important to acknowledge that the process of discovering the universal essence of the experiences of individuals, is strongly related to the interpretation of the individual (ibid.).

Data collection

Most of the time data collection in a phenomenological research is done by in-depth, open interviews with people who experience the phenomena. But other forms of data collection, like observations and literature, can also be done (Creswell, 2007; Lester, 1999). In this research all of those ways to collect data will be used, just as interviews with experts and the local government,

Interviews

Two kind of interviews will be used as data in this thesis. First of all interviews with experts; experts from UNIKA University who did research about this topic or a related topic, and experts from the government who have to deal with the problem of floods in Semarang and especially in Tanjung Mas.

However those interviews are used for background information. A list with names can be found at the end of the literature list. For the first group, the group of the experts, the questions in the interview guide (appendix 1) were especially focused on background information which could not be found in the literature or where more detailed information was needed. After the introduction and the general questions, questions about the problems in Semarang were asked. For example, when there were some differences in the literature about the main causes of the floods, the experts were asked about their opinion about this. Next to that, information was missing about the link with migration or mobility, that is why some questions were asked about this topic. To the people from the government, questions were asked about the current policy and the aimed policy.

The second group of interviews were with the inhabitants of Tanjung Mas themselves, to acquire an in-depth understanding about their experiences of the floods related to their livelihood, their (im)mobility and their decision-making process to move out of the area. Those interviews were analyzed and used to answer the main question of this thesis in Chapters 5, 6 and 7. In the phenomenological approach, for interviews it is aimed to have as less structure as possible, so there is a maximum depth in the conversations (Lester, 1999). However, because for this research it was necessary to work with a translator, it was not possible to conduct totally open interviews, that is why it is chosen to use semi-structured interviews. The phenomenological approach can be applied on both, single cases with one participant, or on multiple participants (*ibid.*). In this research more participants are interviewed, which makes it more possible to discover any differences between the phenomenon itself and the way participants experience it (*ibid.*). However, by using more participants it is important to make a good distinction between the participants and the way the phenomenon, in this case the floods, occur in their environment (*ibid.*). That is why a distinction is made between the three parts of Tanjung Mas, Kota Lama, Kebon Harjo and Tambak Lorok where the floods occur in a different manner. Generally between 5 and 25 participants are interviewed for a phenomenological research (Creswell, 2007:61). In this research, the interviews of 21 respondents are used (appendix 3), 7 in every of the three parts of Tanjung Mas.

It was aimed to have a good distinction in sex and age in every part of the neighbourhood. In every part three or four males and females were interviewed, but it was more difficult to get a good distinction of age. Most of the time the older people in the household were interviewed, since they make the decision to migrate. This because the young adults in the household are not allowed to move out before they are married, which is an important point in the Indonesian culture. The respondents were found by walking through the neighbourhood and ask the people if they wanted to cooperate, while keeping the distinctions between different kind of respondents in the back of the mind.

As already mentioned, the interviews were conducted with the help of a translator. It is important to take into account that a translator is influencing the context of the interview as well, because that person can add her or his own perspective when the information is translated for the researcher. It is tried to make this influence as small as possible, with a conversation before the interviews were conducted to make clear the intentions of the research and the used method. Next to that, semi structured interviews are used instead of an open interview guide, so there is a path in the interview, with topics that need to be covered for getting a better understanding about the experiences of the inhabitants.

The interview guide (see appendix 2) starts with an introduction of the researcher and the aim of the research and the interview. After that, some questions about the respondent and their family situation. The rest of the interview is based on the sub-questions and the research model as you can see in Figure 5, with the help of the theoretical approaches. First there are some questions about the floods and the context of the environmental problems. To mention one more time that it is not about the facts, but about how the inhabitants experience the floods. The questions are about the kind of floods, how often they occur, if the situation changed the last years, and what they think are the causes of the floods. Next to that there are some direct questions about their experiences.

The second part of the interview is about the livelihood of the inhabitants and how the floods are effecting this livelihood. Therefore the questions are based on the vulnerability assets of the Livelihood Approach. Social cohesion and networks define the social capital. Questions about the social asset are about the neighbourhood and the people who live there. For example if the people help each other when there is a flood. The human capital is related to skills and knowledge of the inhabitants and their health. Questions that are related to this asset are the questions about the education level and if the health is influenced by the floods. The basic infrastructure determines the physical capital. This is especially related to roads, water and electricity. Besides, it is also about the physical belongings, like the house of the inhabitants and its condition. The final asset is the financial capital, with questions related to money and savings, but also about the jobs of the people in a household. The reason that some questions are asked about the household instead of the individuals, is because they are responsible together for the living conditions of all people in that household, and thereby their livelihood.

The last part of the interview is focusing on migration and mobility, with questions related to both the Threshold Approach and the Theory of Planned Behavior. As mentioned in Chapter 2, the Threshold Approach is in this research especially used because it focuses on barriers to mobility. So what is holding people back from migrating. First of all there is the mental border threshold, so people sometimes don't even think of migration as an option, which is asked in the first question. The answer of this question also determines a part of the attitude towards migration in the Theory of

Planned Behavior. This attitude can be understood by the questions about why people would and would not migrate as well which is also related to the locational factors in the Threshold Model. The final part of the Threshold Model that is important for the interview guide, is the locational threshold, to understand to what place people would go if they decided to migrate. Next to the attitude towards migrations, the decision-making process is also determined by the subjective or social norm and the perceived behavioral control. Questions that are related to the latter factor are questions about the influence of the government on migration, the expected control to make it impossible to move. But the influence of other people, like family and neighbours and their opinion about migration are also important in the decision-making process. The questions about these topics are related to the social norm.

Observations

Besides interviews, observations were done to answer the main question of this thesis. Next to small observations during the interviews, in the form of expressions of the respondents that are made visible in the transcripts of the interviews, the main form of observations in this research are done on the physical assets. Since the effects of the floods on buildings and roads, for example, can be understood by observations as well, without necessarily the stories of the respondents. These observations are based on pictures made in the research area. "Photographs can convey a great deal of information about the appearance of a place far more succinctly than words" (Rose, 2008: 151). They contain a lot of information about what a place is like (ibid.). Pictures can be used in a descriptive way, to underpin statements that are made in a research, but they can be used as research objects as well in which the picture is seen as one particular view on a situation, because it is taken from one perspective on one moment (ibid.). The first one is used in this research. Pictures are most of the time made of material things, made by both, humans or nature. In this case the pictures are illustrative as well, but they are not a taken-for-granted picture of how a place is really like, but they show something words cannot describe perfectly (ibid.). Next to that, it is taken into account that the picture shows something that possibly only exists at one particular moment (ibid.). Observations are done in order to support the understanding of the conditions in the different parts of Tanjung Mas, since the situation is different compared to the situation of people in the 'western world', and besides to get a better understanding of the stories of the respondents.

Analyzing the data

When analyzing the interviews, the given information is reduced by the researcher to significant statements and combined into themes; certain clusters of meaning (Creswell, 2007). "The 'problem' for many researchers with phenomenological research is that it generates a large quantity of interview notes, tape recordings, jottings or other records all of which have to be analyzed. Analysis

is also necessarily messy, as data doesn't tend to fall into neat categories and there can be many ways of linking between different parts of discussions or observations" (Lester, 1999: 2). In this research this will be done by the computer program ATLAS.ti. This program can help to order the data, by highlighting the different quotes and separate them into themes.

"Following that, the researcher develops a textural description of the experiences of the persons (what participants experienced), a structural description of their experiences (how they experienced it in terms of the conditions, situations, or context), and a combinations of the textural and structural descriptions to convey an overall essence of the experience" (Creswell, 2007: 60).

Since the questions in the interview guide are open questions and the interviews are semi-structured, it is expected that the answers on the questions will be open descriptive answers that can be used in this qualitative research. The answers were expected to give an image of the impacts of the floods and their experience of the floods and how they think about migration. Because the answers were about peoples own experiences and opinions, the data is very personal and different for every individual. However in understanding all those different views about a phenomenon, in the end a general image can be formed.

So "the first stage is to read through and get a feeling for what is being said, identifying key themes and issues in each text"(Lester, 1999: 2). After determining the themes it is tried to make clear what all persons said about the themes, so in the end you can get a list of points about the themes, that forms a description (ibid.). The descriptions of the themes are the most important aspect of the phenomenological research method (Moustakas, 1994). Next to the descriptions of the experiences of the participants, it is also possible to add the experiences of the researcher itself (Creswell, 2007). This in order to understand the role of the researcher in the situation and the context that influences the experiences of the individuals (ibid.). In the epilogue my own experiences are described in order to understand the context from which I experience the information. In the end the essence of the experiences of a phenomenon is discovered and can be understood. In this research it is not tried to bring this essence back to one feeling, but in several aspects in which the livelihood, the (im)mobility and the decision-making process (and their interrelations) are influenced by the experiences of the individuals about the floods. Next to the interviews, some observations based on pictures were done. In analyzing these pictures they will be shown in the analyzing chapters and a description will be given about what can be seen on the pictures, which is relevant in answering the sub-questions. In order to underpin the stories of the respondents.

The interviews with the experts were analyzed by reading the transcripts as well, and looking at useful information about themes in the thesis, especially about the background of Semarang and its floods. The interviews were semi structured, and before the interviews were conducted, there were some gaps in this thesis I kept in mind during the interviews. This because further questions about these subject could be asked during the interviews. While reading the transcripts, quotes were highlighted and compared with the answers of all the experts. Afterwards, the most important information of the interviews was processed in this thesis. In the observations, the pictures are analyzed to underpin the statements and stories of the inhabitants about the impact of the floods on their assets, especially the physical assets. After all pictures were taken, a description about what was seen on the pictures was made, just as the context in what they were made. When the biggest part of the analyzing chapters was written, based on the interviews with the inhabitants, another look was taken at the pictures. With the stories in mind, pictures were chosen that could contribute to the stories of the respondents. These pictures, sometimes together with their descriptions were placed in the analyzing chapters.

4. Semarang

In this chapter background information about Semarang and the environmental problems in Semarang will be discussed. First general information about Semarang is given, about the location, history, landforms, government, and population growth. Later on, the environmental problems and changes will be explained. The last part of the chapter will give more information about the neighbourhood Tanjung Mas, and why this is chosen as the case in this research.

Location

Semarang is the capital city of central Java and is located in the northern part of the island, as is shown in Figure 5 (Harwitasari, 2009; Kantor Informasi dan Komunikasi, 2007; Hadipuro, 2012). The area of Semarang is with 400km² the fourth biggest city in Indonesia (Hariwitsari, 2009), and with 1.5 million inhabitants the fifth most populous city (Hadipuro, 2012). “Since 1992, the city has been reorganized into 16 districts and 117 sub-districts” (Hadipuro, 2012: 55), shown in Figure 6. Next to the city itself, there is also the region of Semarang, which has 6 districts/cities and around 5 million inhabitants (Mulyana, et al., 2013).



Figure 5: Location of Semarang (Hadipuro, 2012: 6).

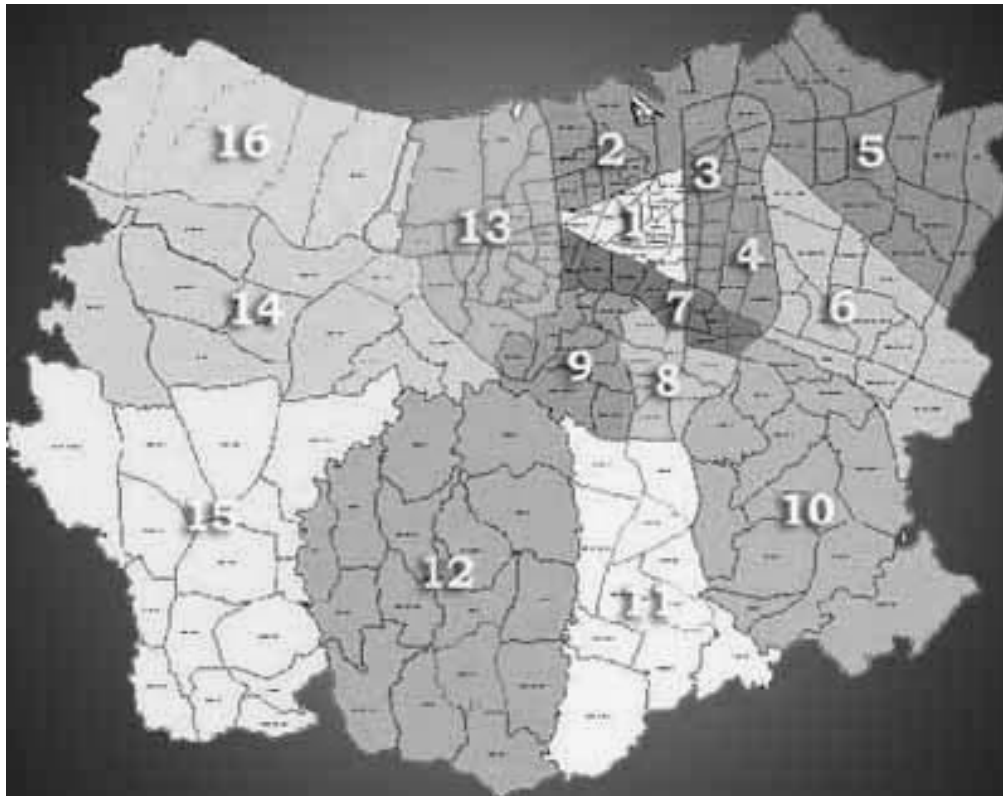


Figure 6: Districts of Semarang (Hadipuro, 2012: 55).

History

The city of Semarang has been a harbor city since eight years AD (Anno Domini) (Tio, 2007). But the founding of the city and its name did not emerge until the 16th century when Ki Pandan Arang became the regent of Semarang city and established the city politically (Kantor Informasi dan Komunikasi, 2007; Tio, 2007). The city became to grow into a region and with the Old City (Kota Lama) as its centre of commerce (Kantor Informasi dan Komunikasi, 2007). In the beginning of the 17th century the Dutch came to Indonesia for trade. After 1743 it was the busiest harbor of Indonesia (Tio, 2007).

Landforms

The city of Semarang consists of a lower part and an upper part (Kantor Informasi dan Komunikasi, 2007; Harwitasari, 2009; Hadipuro, 2012). The lower part can be divided into the coastal area and the low lying area (Harwitasari, 2009; Hadipuro, 2009). Especially the coastal area is vulnerable for floods (Harwitasari, 2009; Hadipuro, 2009). The shoreline of Semarang was on the foot of the higher part, approximately 500 years ago. This is about 5 to 7 kilometer land inwards, so the lower part of Semarang was formed as a result of sedimentation (Tio, 2007; W. Hadipuro, pc, 24-10-2013). The northern part of Semarang consists of alluvial land, which emerged after the sedimentation (Harwitasari, 2009).

“It is on these deposits (Marin sediment and alluvial sediment) where the land subsidence is occurring, because it cannot carry on the structural development on it. Meanwhile the materials of the lowland area are composed of the alluvial and coastal deposits which are susceptible from land subsidence triggered by extreme groundwater withdrawal” (Harwitasari, 2009: 28).

So in other words, the ground in the lower part of Semarang is not yet consolidated, so construction load and ground water extractions have a big impact on the land subsidence in this part of the city (W. Hadipuro, pc, 24-10-2013).

Government

The system of the Indonesian government is very similar to the Dutch system (Kantor Informasi dan Komunikasi, 2007). There is a national government, which consists of several provinces. Semarang is the capital city of the province Central Java. Under the province there are municipalities, and the municipality of Semarang is divided into 16 districts as mentioned before. Within a district there are neighbourhoods, and Tanjung Mas is one of these neighbourhoods (Mardiyono, pc, 29-11-2013). There are also several layers under the neighbourhood level, whose heads are appointed by the people themselves (ibid.). First there are the Rukun Warga's (RW's), which is one small district within a neighbourhood, and the head is chosen by the heads of the Rukun Tetangga's (RT's). One RT is a community of one or a few streets, and this leader is chosen by the inhabitants of those streets (ibid.).

The municipality of Semarang has three main policies; metropolitan, religion, and commerce and service (Kantor Informasi dan Komunikasi, 2007). So the environmental problems are not the main concern of the city. One explanation can be that governments in big cities in poor countries are most of the time very busy with facilitating the massive urbanization (Baker, 2012). Also because of a lack of resources, lack of capacity, lack of affectivity and a lack of political will (Baker, 2012). Adaptation and risk reduction is very expensive, while the money is not available (ibid.). Nowadays a small change is coming in the policy of the municipality, there is a small attention for environmental management. But it is very new and the local government concerning this topic gets a very low budget, only 5/6 percent of the total budget is for environmental management (ACCCRN, 2010). And the programs that are existing already are most of the time inadequate because of a lack of coordination, integration, budget, and ineffective planning (ibid.). Next to that, there is little support from the province.

There are some plans, but the adaptations of the government are not yet implemented, or they are inadequate (Harwitasari, 2009). And most of them focus only on short term instead of long

term planning (ACCCRN, 2010). For example, every five to ten years, the municipality of Semarang, together with the leaders of the neighbourhoods, are heightening the streets in the flood areas. So at the moment the streets are heightened, the water is not standing in the streets anymore. However, they already know that within a couple of years, they have to do it all over again. And on the other hand, the inhabitants of Tanjung Mas are in some cases not even glad that the government is heightening the roads. The water which is normally in the streets, is now going into their houses. So they feel obligated to heighten their houses again, when they do not have the money in most cases. So next to the fact that the government is only taking measurements for the short term, it is not even sure if these measurements are really helping the inhabitants. This indicates that the government is not really listening to the inhabitants, and is not adjusting their actions on the needs of the inhabitants.

Population growth

Especially in the poorest countries of the world there is an acceleration of people who move to big cities (Baker, 2012; Hayes, 2012). In the beginning of 2014, 51% of the world's population lives in urban areas (Demographia, 2014). Semarang is one of the 11 metropolitan cities in Indonesia (Mulyana, et al., 2013). Together with better transport possibilities and better facilities, the city expanded very fast (Tio, 2007). Nowadays there live 1.5 million people in the city of Semarang, and 5 million in the metropolitan area (Tio, 2007; Mulyana, et al., 2013). The population density of the city can reach 23.000 people per km², especially in the northern coastal part of Semarang (Mulyana, et al., 2013).

Environmental change and floods

Population growth is one of the main accelerating factors of land subsidence, because of the need of more resources including ground water (Abidin, et. al., 2009). Other problems of population growth are the lack of resources because agricultural land becomes residential (ibid.). Population growth also leads to more waste in rivers and other sources of fresh water, so more groundwater extraction is needed to get fresh water (ibid.), which leads to more land subsidence. 38% of the people in the world live in flood areas (Baker, 2012: 15), and in South East Asia a lot of cities experience floods (Marcotullio, 2007). One of those cities is Semarang. 15000 hectare of the city is seen as a flood prone area (Harwitasari, 2009). A big part of the city is a so called 'Low Elevation Coastal Zone', which means that the land is less than 10 meters above the sea level, and in Semarang 840.000 people live in that area (Mulyana, et al., 2013), which is more than half of the inhabitants.

As already mentioned in Chapter 1, "Semarang faces three types of flooding which are local flood inundation, flooding caused by river flooding (from the hinterland) and flood caused by high tide from the sea" (Harwitasari, 2009: 29). The floods are already a problem for a long time. The

experts from Unika who grew up in Semarang cannot remember the city in another way, and there is even a song about the floods dated from the Dutch colonial period (B. D. Setianto, pc, 24-10-2013; W. Hadipuro, pc, 24-10-2013). The song is called Gambang Semarang and one part of the lyrics is 'Semarang Kaliné Banjir' in Javanese language this means 'flooding in Semarang' (D. Danardono, pc, 31-10-2013). In the Dutch period there were already two big channels build on the eastern and western side of the city, to let the water flow easily to the sea, which means that back then there were already problems with floods (P. D. Sasongko, pc, 20-11-2013).

Nowadays, the floods are becoming worse, the area becomes wider and the duration of the floods becomes longer (B. D. Setianto, pc, 24-10-2013). In some parts of Semarang there is a constant flooding for 7 or 8 months a year (ibid.). And the area of the floods will only grow in the future (Harwitasari, 2009). In some parts of the city, especially close to the coast, the floods occur every day (Irawati & Winaktoe, 2009). But generally The floods occur 4 until 9 times a month in 6 villages in Semarang (Harwitasari, 2009). Tanjung Mas is one of them. Next to the rainfall in the rainy season from November until May, the floods are also strongly related to the tidal movement, which is higher with the full moon, and it is strengthened by the sea level rise and land subsidence (Harwitasari & Van Ast, 2011: 1). So, together, big rains and sea level rise that are accelerated by climate change, and environmental change in the form of land subsidence, are increasing tidal floods (Harwitasari, 2011; T. Rahardjo, pc, 31-10-2013). In Semarang the sea level rise, according to the Ministry of Fishery and Marine affairs, is about 7.5 centimeter every year, measured in the period from 2003 to 2008 (Harwitasari, 2009). Land subsidence is around 9 centimeters a year, with 16 centimeters in some areas (Harwitasari, 2009), so relatively the water can rise around 20 centimeters every year compared to the land.

The influence of land subsidence in the city is visible by cracking buildings and infrastructure. Which is visible in Picture 1, where the houses on the right side of the road are much lower compared to the road which has been heightened several times already. But it is also visible by the changing pattern of the flows of surface water and tidal floods (Abidin, et. al., 2009). Land subsidence is caused because of ground water extraction by industries and people (B. D. Setianto, pc, 24-10-2013; T. Rahardjo, pc, 31-10-2013; Hadipuro, 2009). Because of this there is also an intrusion of sea water, what makes people dig even deeper to get the fresh water (B. D. Setianto, pc, 24-10-2013). The water system of the government often does not reach the coastal part of Semarang, so people depend on the ground water (W. Hadipuro, pc, 24-10-2013). Next to that, land subsidence occurs because the ground of Semarang is quite new and not yet consolidated, so it cannot handle the load of the constructions and the ground water extraction (P. D. Sasongko, pc, 20-11-2013; Mardiyono, pc, 29-11-2013).

Besides the big problems of climate change and land subsidence there are other factors that accelerate the floods and the effects of the floods. First there is a bad drainage system in Semarang. People have bad habits and throw all their garbage in the small channels, which causes that the water cannot easily go away with heavy rainfall. And next to that there is no maintenance to keep the drainage system in good quality (P. D. Sasongko, pc, 20-11-2013; Mardiyono, pc, 29-11-2013). And second, there is reclamation of land which was first used as fishponds. More and more people came to live in Semarang and reclamation is the only way to get land and start a living. So the water that first went to the fishponds needs to go to other, lower, places of the city (Mardiyono, pc, 29-11-2013).



Picture 1: Land subsidence (3-10-2013)

Choice of Tanjung Mas

Tanjung Mas is divided into three parts, Kota Lama (Old City), Kebon Harjo, and Tambak Lorok (see Figure 7) located in district number 3 (see Figure 6), that differ in social and economic status and in environmental conditions related to the floods, with the best situation in the Kota Lama and the worst in Tambak Lorok (Hadipuro, 2012). Tanjung Mas as a research area is chosen because of this distinction between the three different parts of the neighbourhood. This makes it possible to compare the impacts of the floods on the people living in the neighbourhood. Next to that, as already mentioned in the introduction, the situation of the floods in this neighbourhood are a big problem nowadays already, and those problems will get worse in the future. Another reason to choose this neighbourhood, is because there is already some literature available about this area and its water problems (ibid.).

companies, and the people that live there are most wealthy compared to Kebon Harjo and Tambak Lorok (Hadipuro, 2012).

Kebon Harjo consists of RW 2 to 8, and 10 and 11, and Tambak Lorok of 9 and 12 to 16. The last one suffers most from tidal floods in Semarang (Hadipuro, 2009). There is a highway, which runs from Jakarta to Surabaya that goes straight through Tanjung Mas, and thereby divides it into 2 parts, with Tambak Lorok north and the rest of the neighbourhood south of the highway (ibid.). Kebon Harjo, lies south of the highway and suffers of floods by the sea and by rainfall, however, the frequency is not that high and the effects not that big, compared to Tambak Lorok. (ibid.). Next to the floods, these two parts suffer from other problems as well. Both parts can be seen as very poor, especially the people in Tambak Lorok (Hadipuro, 2012). And “this is an area that people would avoid, because there is a lot of criminality in the neighbourhood” (T. Rahardjo, pc, 31-10-2013).

The condition of the floods in Kota Lama are also better compared to the other two parts of the neighbourhood, but it still suffers from floods, especially floods caused by rainfall. “Some public facilities have been built to protect the area from flood: a pond to store the water from the flood and the replaced concrete roads with brick roads to increase the absorption of floodwater. These facilities have helped the people of Kota Lama to cope with flood problems” (Hadipuro, 2009: 57). That is why this part is better off compared to the rest of the neighbourhood. The fact that there is a difference in wealth and in the effects of the environmental problems makes this neighbourhood an interesting area to examine. Because the most wealthy part, Kota Lama, with the best environmental conditions can be compared with parts bad conditions and less wealth, like Kebon Harjo, and even worse conditions and most poor, like Tambak Lorok (W. Hadipuro, pc, 24-10-2013).

5. Background and floods

At this point it is clear what floods occur in Tanjung Mas, Semarang, according to the literature and interviews with experts about this subject. However, the main question is focusing on the experiences of the inhabitants of the neighbourhood. That is why it is important to understand in what way the floods and its causes are seen by the inhabitants of Tanjung Mas. In that way it is possible to see if there are differences in the understanding of the floods. Next to that, as already mentioned in Chapter 3, it is the personal view on the floods which is important in this research to understand the impact on the floods in the livelihood of the people, and its relations to (im)mobility and the decision-making process to move or to stay. This will be done by answering the first sub-question:

How do the inhabitants of Tanjung Mas, Semarang, experience the floods?

Therefore, to understand their experiences, it is important to get to know the respondents. That is why every section of this chapter will start with a short introduction of the inhabitants of that particular part of Tanjung Mas. In Appendix 3 you can find a list with names and other information about the respondents, but in the other chapters of this thesis the respondents are mentioned by numbers and sex. In this chapter, a distinction will be made between the three parts of Tanjung Mas, in order to understand the environmental differences within the neighbourhood.

Kota Lama

Respondent 1 is a 45-year-old man, who has lived in Kota Lama for 33 years with his wife and two children. Originally he comes from an area east of Semarang and in 1980 he moved to this place. Once he moved out to another area in Semarang, but he did not feel comfortable there, so after one month he moved back to Kota Lama. This respondent is the leader of one of the RT's in Kota Lama. Respondent 2 is the leader of Kota Lama. He is a 50-year-old man and he lives together with his wife and son. His other three children already moved out. He was born 500 meters from Kota Lama, but he moved here already when he was four years old and he never moved again. The third respondent is a 53-year-old woman who lives in her house with her two adult sons. She is originally from a place three hours from Semarang, but she already moved to Tanjung Mas when she was three. However at that time she lived in Kebon Harjo. When she was 17, she moved to Kota Lama on her own, to start a small restaurant and she has never moved out again. Respondent 4 is a 50-year-old woman who lives on her own in her house which is a shop as well, because her husband already died and her son

moved out already. Originally she comes from Solo (city south of Semarang), but in 1970 she moved here and she never moved out. The fifth respondent is 33-year-old woman who was born and raised in Kota Lama and she never moved out. She lives in her shop with her husband and three small children. Her parents and sister live across the street. Respondent 6 is originally from Semarang, but he moved to Kota Lama when he was three years old. Now he is 59 years old and he lives in his house, which is next to the company he worked for, with his mother, his wife and one child. The last and seventh respondent that was interviewed in Kota Lama is a 67-year-old woman, who was born and raised in the same house where she lives now. She lives there with her husband and three children. Her other three children already moved out.

The environmental situation in Kota Lama is better compared to the other parts of Tanjung Mas. However the people still have to deal with flooding, both rain and tidal, but it does not occur every day in most parts of the neighbourhood. Respondents 1 (male (M)) and 6 (M) only experience floods from rain once or twice a year, but never tidal floods, while respondents 3, 5 and 7 (all female (F)), experience more tidal floods. These tidal floods are worse in combination with pouring rains. These pouring rains occur mostly in the rainy season, as mentioned by respondent 3 (F), and confirmed by most of the other respondents, since the worst floods occur during these months according to them. The respondents that experience tidal floods mention that this happens every night, Respondent 5 (F) even mentions that the water in the streets never disappears. But according to respondent 2 (M), 3 (F) and 4 (F) the situation got better, since the roads were heightened. These differences in the kinds of floods that occur can be related to the location of the houses in Kota Lama, since the area is higher in the south of Kota Lama compared to the north. Most people do not experience water in their house when there is a normal flood, only in some occasions, when the water is very high. The last time this happened, according to the respondents, was in November and December 2012.

The causes of the floods differ according to the respondents. None of the respondents do mention land subsidence when they talk about the causes of the floods in their neighbourhood. Only one of them, respondent 2 (M) mentions that Kota Lama is one of the lowest points of Semarang, so all the water from the city comes to Tanjung Mas. This could be related to land subsidence, but it does not mean the same immediately. The main cause according to the respondents is the bad drainage system. According to respondents 1, 2 and 6 (all M) the canals are full of garbage and mud, and they are never cleaned, nor by the government and neither by the inhabitants itself. That is why the water cannot stream anymore, so floods occur. The second cause, mentioned by respondents 1 (M), 4 (F) and 7 (F) are the reclamations of the sea and fishponds by factories. The water from these places needs to go to another place and that is why floods come to Kota Lama. Respondent 2 (M) mentions two more causes that influence the floods in his neighbourhood, first because the pumps

are not big enough to deal with all the water, and secondly because there is a big boat (a touristic attraction) in river before Kota Lama, and that is why the water cannot flow easily to the sea.

All respondents experience floods as a part of their normal life, because it has been there ever since, they do not know another situation. Respondent 2 (M) acknowledges that it is normal to have floods, but that it is still worrying, even though it is not dangerous in the case of small floods. Respondents 3 (F), 4 (F), 6 (M), and 7 (F) mention that they feel relaxed with a small flood, the floods that stay in the street and do not come inside the house. However, when there is a high flood they feel afraid and worried, since it is difficult to function. Respondent 3 (F) mentions that sleeping is difficult when there is a high flood, which comes inside the house, or when cars and motorbikes push the water aside, so waves emerge.

Kebon Harjo

A 69 year-old-woman is the first respondent in Kebon Harjo. In 1973 she moved on her own from Yogyakarta to this house. In 1975 she married and her husband moved in. Now she lives in the house with her husband, her son and his wife who is pregnant. The other three children already moved out. Respondent 2 is a 43-year-old woman who lives in her house with her husband and three children. She was born and raised in the same house. Respondent 3 lives in his house with eight people. He and his wife, their three children and also with three grandchildren. He is 57-years-old and is originally from Semarang, but not from Kebon Harjo. He moved here in 1966 with his parents. The fourth respondent is a 68-year-old woman who lives behind her shop with her husband, two children and one grandchild. she comes from Solo, but moved here in 1958. Respondent 5 is a 17-year-old boy who only moved to Kebon Harjo one and a half year ago, because he was sent by his family to sell food for their family business. Respondent 6 is a woman who is 52 years old and has lived here since 1986. She is originally from an area in east Java. Now she lives here with her husband and two adult daughters, and she never moved out. Her husband is the RW of Kebon Harjo. Respondent 7 is a 45-year-old man who lives in his house with his mother, his wife, his daughter and her husband and their child. So there are four generations in one house. They have never lived somewhere else.

The situation with the floods in Kebon Harjo is worse compared to Kota Lama. People in this neighbourhood have to deal with both rain and tidal floods. Only some respondents (2 (F), 3 (M) and 6 (F)) only have to deal with floods from rain, which occur seasonally. But they also mention that some parts of Kebon Harjo, especially the two big roads east and west from the neighbourhood, are never dry from tidal floods, as respondent 4 (F) mentions. So the inhabitants of Kebon Harjo have to deal with floods more often compared to those in Kota Lama, but for most of them their house is free from flooding, so the water only occurs in the streets. Especially since the government is heightening the roads, as respondents 1 (F), 2 (F), 3 (M), 6 (F) and 7 (M), mention. And also because

some people heighten their houses, according to respondent 7 (M). This had led to less floods in their houses for about the last 10 years. Only once, in 2005 the water was that high from rain, the flood came into the house of respondent 3 (M), 6 (F) and 7 (M). However, it still comes into their streets. Respondent 7 (M) mentions that the tidal floods are into his street every morning from 8 until 12 and every evening from 6 until 8. In the 2 streets on both sides of Kebon Harjo, the tidal flood is getting worse the last few years. Respondent 5 (M) told that when he came to live here 2 years ago, the tidal flood was about 40 centimeters in these streets, but now 70 centimeters is already normal.

The main cause of the floods according to all the respondents of Kebon Harjo is because of the bad drainage system, influenced by the bad habit of people to throw their garbage everywhere, since this leads to obstruction of the canal, which are never cleaned. Respondent 6 (F) also mentions that there are a lot of people living above the canals. Because of this, the canals become smaller and it is almost not possible anymore to clean the canal if there is an obstruction. Land subsidence is mentioned as a cause as well, respondent 2 (F) once heard about it on television and respondent 6 (F) heard it from other people. Respondents 1 (F) and 4 (F) experienced it themselves, especially because there is more and more water in the streets. Other causes according to several respondents are, just like in Kota Lama, reclamation by the companies in the harbor. Another point is the management of the government, since they are not prepared for the floods and they do not take good care of the pumps, as respondent 7 (M) told. Finally, causes that the inhabitants experience, are floods because of the rainy season according to respondent 1 (F), because of the rising sea level, as respondent 6 (F) mentioned and respondent 4 (F) told that the water comes to Kebon Harjo because it is the lowest point of Semarang.

Except respondent 5 (M), all respondents in Kebon Harjo experience the floods as a part of their normal life, especially the small floods. This can be related to the fact that respondent 5 (M) did not grow up in this area, but moved there less than two years ago. He mentions that it feels weird when there is a flood and he is very afraid, especially when the water almost comes inside the house, so it can destroy everything. In those kind of situations, when the flood is that high, most of the other people feel afraid as well. Respondent 6 (F) and 7 (M) feel worried and sad for example, they keep watching the water, and respondent 7 (M) feels like he is on a boat, because he cannot go anywhere. That feeling of difficult access occurs with respondents 2 (F), 4 (F) and 6 (F) as well. Respondent 4 (F) feels angry because she cannot do anything and respondent 2 (F) told that it is especially difficult to go to the market for food or for the children to go to school.

Tambak Lorok

Respondent 1 (man on the left side in Picture 2) is a 25-year-old man who lives in Tambak Lorok for all his life. He has never moved out of his house, where he lives with his wife, his sister and her

husband and their two children. Respondent 2 lives with her husband and her child in Tambak Lorok, where she was born and raised herself. She is 34-years-old and she never moved out. The third respondent is a 46 year-old-man. He is the leader of one of the RW's of Tambak Lorok. He lives with his wife and 3 children. Originally from another area near Semarang, but he moved here for his work when he was still young. Respondent 4 is a 50-year-old man, who moved here in 1970 from another part of Semarang. His first wife already died, but now he lives in the house with a new wife, and his son and his wife. His other two children already moved out. The fifth respondent is a 24-year-old woman, she was born and raised here. They live with eight people in the house. Her parents, her husband and child, a sister with her husband and another sister. Respondent 6 is originally from an area nearby Semarang, but he has already lived in Tambak Lorok already for 35 years. He is 54 years old himself and he lives in his house with his wife and two children. The other two children already moved out. The last and seventh respondent is a 29-year-old woman and she is originally from here. She lives with two households, her parents and two of their children, and she and her husband with their three children.



Picture 2: Respondent and family (13-12-2013)

In Tambak Lorok people experience the worst floods of Tanjung Mas. Especially from tidal floods, since everyone experiences these floods and only two respondents, 5 (F) and 7 (F), experience floods from rain as well. Also the frequency in which the floods occur is worse compared to the other parts of the neighbourhood. In the case of respondents 1 (M), 3 (M) and 7 (F) the tidal floods come every night, and most of the time into the house as well. Respondents 4 (M) and 5 (F) mention that in their streets the floods occur half of the month. Except respondent 5 (F), who just heightened her house, all inhabitants mention that the situation with the floods in Tambak Lorok became worse over the

last few years. Respondent 1 (M) explains that before 2011 the worst flooding was about 20 centimeters, but now this already became normal. They even experienced floods of more than 1 meter sometimes. This happened for example in June 2013, according to respondents 1 (M), 3 (M), 4 (M) and 7 (F). This time, the water came like a small tsunami, which is the worst tidal flood that can happen as respondent 3 (M) told. Another bad incident is, that the floods cannot be predicted, according to respondent 2 (F) and 3 (M). This means that the people in Tambak Lorok can never prepare themselves properly.

When the inhabitants of Tambak Lorok thought about the cause of the floods most people (respondents 1 (M), 2 (F), 6 (M) and 7(F)) answered that reclamation of land was the main factor. Especially the fishponds that are taken by companies, but also because the roads are heightened every time again, so the water has to move to other places, as respondent 6 (M) mentions. This is already discussed in Chapter 4, because the government is not adjusting their measurements to the needs of the inhabitants. Respondent 3 (M) and 7 (F), also mentioned land subsidence as a major factor, because the land is getting lower and lower. They also knew that it is about 10 centimeters every year. And respondent 3 (M) mentioned the rising sea level as well. The bad habit was mentioned in Tambak Lorok as well, but only by respondent 1 (M), who also mentioned that there is no dyke to protect the neighbourhood from flooding. The last cause that was mentioned is a local cause, because respondent 5 (F) lives next to the real harbor. She told that the boats sometimes hit the water, so big waves emerge that role into her street and cause floods.

In Tambak Lorok again, all of the respondents see the floods as a part of normal life, but it does not mean that they do not feel worried and afraid in some situations. Especially when the floods are higher with big waves, as respondents 4 (M), 5 (F) 6 (M) and 7 (F) mention. Because sometimes the waves are that big and the stream goes that fast, the flood looks like a small tsunami according to respondent 4 (M). The water easily comes inside the house and most respondents are afraid that their belongings, especially their electronics, will be damaged. Other factors that make people feel afraid is the fact that the floods come very unpredictably, and mostly at night, while almost all people sleep on the ground, as respondent 1 (M) told. Since Tambak Lorok is an area in which a lot of poor people live, some respondents, like 2 (F) and 7 (F) feel afraid about the future as well, because they do not have the money to heighten the house, as a protection to the floods.

Experiences of the floods

In the end of this chapter we are able to answer the first sub-question:

How do the inhabitants of Tanjung Mas, Semarang, experience the floods?

We can conclude that also when we listen to the stories of the inhabitants about the floods, Kota Lama has the best situation, followed by Kebon Harjo and Tambak Lorok, which has the worst situation. In Kota Lama people experience not that many and high floods, only occasionally with heavy rains. The water does not come into the house normally and people experience it as a part of their normal life. With a high flood they think it is difficult, but they do not mention that they feel scared. In Kebon Harjo and Tambak Lorok people do feel scared and worried sometimes when there is a high flood. But in these neighbourhoods the water comes into the houses quite often. Especially in Tambak Lorok, where in some parts the water comes into the houses half of the month. The inhabitants of Tambak Lorok feel worried about their belongings as well. So there is a clear spatial differentiation in the way the inhabitants experience the floods. The people who live in the part of Tanjung Mas, where the floods do not occur that often, are not as concerned with the floods and the effects of the floods for now and in the future, compared to the people in the areas where the floods do occur several times a month.

According to all inhabitants the main causes are because of the bad drainage system because of all the waste and because of reclamation of the fishponds. Since the waste is everywhere, the drainage system is not working, so the water cannot go anywhere, as shown in Picture 3. Despite the fact that, according by the literature and the experts, land subsidence is the most increasing factor of the floods, there are only a few people that understand and mention this as a cause. This means that the inhabitants do not really understand that their situation will become increasingly worse in the future, so they will not take any steps to protect themselves on the long term at this moment.



Picture 3: Waste (3-10-2013)

6. Livelihood

This chapter will focus on the livelihood of the inhabitants of Tanjung Mas in order to answer the second sub-question:

How are the floods affecting the livelihoods of the inhabitants of Tanjung Mas, Semarang?

It is attempted to understand their lives in a more in-depth way by using the Sustainable Livelihood Theory. By gaining an inside in the physical, financial, social and human assets of the inhabitants of Tanjung Mas, as explained in Chapter 2. The vulnerability of these assets are the most important point of the Sustainable Livelihood Approach. So by discussing the vulnerability of their assets and understanding the effects of the floods, in the end the effects of the floods on the livelihoods of the respondents can be explained.

Physical capital

First we will take a look at the physical capital. As mentioned in Chapter 2, this asset is especially about infrastructure and shelter. Based on the interviews with the respondents this asset is divided into three parts, the house, belongings, and water, electricity and roads in Tanjung Mas.

House

The house of the inhabitants of Tanjung Mas is the first and most important part of the physical asset of the livelihoods which is going to be discussed. It provides shelter and is one of the first necessities of live. Except from respondent 2 in Kota Lama (M-KL), every respondent has a house. In half of the cases with a shop or a food stall. Respondent 2 (M-KL) is homeless and he does not like to talk about his housing situation. In Kota Lama most houses are usually free from flooding, only sometimes water comes inside the buildings, in the case of respondents 1 (M-KL), 3 (F-KL), 4 (F-KL), 6 (M-KL) and 7 (F-KL). Sometimes this damages the house, but it damages especially the belongings of the respondents, which will be discussed below. In Kebon Harjo Respondent 1 (F-KH), 3 (M-KH) and 6 (F-KH) told that sometimes they have water inside their houses but this happens very rarely, for example only when there is a heavy rain, because they prepare on forehand by heightening their houses in time, just like respondents 4 (F-KH) and 7 (M-KH) do. In Tambak Lorok a lot of people suffer from water that enters their houses. In the case of respondents 2 (F-TL) and 6 (M-TL) this happens occasionally, but in the case of respondents 1 (M-TL), 4 (M-TL) and 7 (F-TL) this happens very often, up to several weeks in a month, with the worst situation for respondent 1 (M-TL):

“This house can be like a indicator. If the rob comes with the high waves, and with the low waves it comes into the house. But if this house is not flooding, that can mean that the waves is in the low condition. And in a month the rob is almost every day” (Respondent 1 (M-TL)).

So even though most houses are made of concrete, most of them are broken or covered with mold due to the water that comes into the houses. That is why respondent 2 (F-TL) also mentions that it is very important to clean the house after a flood, because all the dirt that comes inside.



Picture 4 : Heightened sealing (9-1-2014) and Picture 5: Old house sank in the ground (9-12-2013)

Excluding respondent 3 (F-KL), all respondents in Kota Lama heightened their house at least once in the time they are living in that house. Especially because they feel that they need to heighten their house, when the streets were heightened. On pictures 4 and 5 you can see two heightened houses. For the first building the sealing was too low after heightening, so they heightened the ceiling as well. And in the other picture you can see a new house which was build on top of the old one, that already sank into the ground. Respondent 3 (F-KL) is not able to heighten her house, that is why she moves to a building across the street when the flood is too high to stay in her own house. As mentioned, in Kebon Harjo there are five respondents who heightened their houses. Respondent 1 (F-KH) mentions that they have to do this every four to five years, in other to keep up with the floods. Respondent 3 (M-KH) and 4 (F-KH) told that their old house already sank into the ground and that they build a new one on top of it. Respondent 4 (F-KH) even mentions that she regularly has water inside her house, and that the street in front of her house is always full of water. Respondents 2 (F-KH) and 5 (M-KH) never heightened the house since they live there, respondent 2 (F-KH) because her house is already pretty high, and respondent 5 (M-KH) because he has only lived there since one and

a half year and also because he is renting his house. In Tambak Lorok, all respondents have heightened their house at least once. Respondent 7 (F-TL) told that it is time to heighten the house again, but she does not have money at this point, so she needs to wait. Out of all parts of Tanjung Mas, none of the respondents have enough money to protect themselves in the future, by heightening their houses again. And only half of them have enough money to protect themselves and their belongings for now. Except from Kebon Harjo where there are only two of the respondents, 1 (f-KH) and 6 (F-KH).

In whole Tanjung Mas, most houses are made of concrete, combined with wood and steal. However, the condition is best in Kota Lama. However, only respondent 1 (M-KL) mentions that his house is enough to protect him and his family from the floods, but the rest of the respondents in Kota Lama, is not mentioning something about the ability of the house to protect them. While in the other parts of Tanjung Mas half of the people mention that the houses are not able to protect them. They feel uncomfortable there and are sometimes afraid of the water. The ability of protection is closely related to the financial asset as well. None of all the respondents have own houses in other areas, only respondent 6 (M-TL) has land, and he is planning to build a house there to move to. Some other people do have family living outside of Tanjung Mas, but no houses or land for themselves. The houses people live in at this moment are not all legal. Some did build their houses on the land of companies, the railway station, or the harbor.

Belongings

As mentioned above, sometimes the water comes into the house of the respondents when there is a flood and this can affect their belongings. For respondents 1 (M-KL) and 7 (F-KL), the floods already damaged some of their belongings, like furniture and electronics. As is shown in Picture 6 where the desk of respondent 1 (M-KL) is broken because of the floods. That is why almost all respondents put their belongings in a higher place, especially during the rainy season, according to respondent 6 (M-KL). For example, respondent 1 (M-KL) who put a pallet under his fridge, in order to prevent that the water can damage it (See Picture 7). All respondents in Kebon Harjo put their belongings on a higher place to protect them from flooding. Even though almost all respondents experience difficulties in protecting their belongings, only two of them, 3 (M-KH) and 7 (M-KH), mention that they have broken belongings, like furniture, because of the floods. Except from respondents 3 (M-TL) and 5 (F-TL) in Tambak Lorok, all respondents suffer from damage to their belongings due to the floods, in most cases their electronics or furniture, but also mattresses and clothes. For example respondent 1 (M-TL) told that normally they sleep on a mattress, but when there is a flooding that comes into their house, which occurs for around 12 days in a month, they change their mattresses for a carpet. And when the flood is real high, they sleep on the couch or they move to a higher place in the

neighbourhood. On Picture 8 you can see their door which is damaged because of the floods. So in Tambak Lorok, where they also suffer most from water inside the house, they also have more damage to their belongings compared to respondents in the other parts of Tanjung Mas. Another way to protect the belongings is to clean the house after a flood, as respondents 1 (M-KL) and 7 (F-KL) mention, so the damage cannot become worse. The floods bring oil and fuel, so the smell is very bad after a flood. In Tambak Lorok respondent 7 (F-TL) does the same, since the water brings a lot of garbage. In Kebon Harjo respondent 5 (M-KH) cleans the canals in front of his house regularly to prevent the water streaming out of the canals and into his house.



Picture 6: Broken desk (29-11-2013), Picture 7: Protection (29-11-2013) and Picture 8: Broken door (13-12-2013)

All respondents in Kota Lama mention that they are able to protect themselves and their family for the floods. Except respondent 2 (M-KL), but this is pretty much related to the fact that he does not have a home, and he lives at street or at friend's places. And respondent 6 (M-KL) told that he is able to protect himself, but he does not have enough resources to ensure a better and sustainable

protection. This is the same for almost every respondent in Tambak Lorok and Kebon Harjo. Only respondent 3 (M-TL) told that he is able to protect himself and his belongings. In the case of respondent 4 (M-TL) there is an extra issue, because he has his own boat. The floods, especially compared with high waves, can damage the boat. A few days before the interview the boat loosened from the ropes and crashed to wooden poles in the water. It was almost broken, but they could save it just in time.



Picture 9: Flood in street (9-12-2013)

Water, electricity and roads

Generally none of the respondents have any problems with the electricity and the water because of the floods. Sometimes the electricity turned off during a pouring rain according to respondents 4 (F-KL), 5 (F-KL), 2 (F-KH), 7 (M-KH) and 4 (M-TL). In Tambak Lorok there are some more problems with the electricity, since it is turned off just sometimes during the day without a reason. But all of this has nothing to do with the floods in the first place. The quality of the water in Tambak Lorok is better compared to the other parts of Tanjung Mas, since they do not experience any problems at all. In Kota Lama it is also pretty good, only respondent 4 (F-KL) mentions that she has problems with the water due to the floods. She mentions that when there is a flood, the water becomes more salty and darker, she is also the only respondent who merely uses groundwater. In Kebon Harjo this happens with three of the respondents 2 (F-KH), 6 (F-KH) and 7 (M-KH).

In all neighbourhoods the situation with the roads is the same. They are heightened many times, so the water is not in the streets every day anymore, except from the bigger streets on both sides of the neighbourhood as shown in Picture 9. Even though they are heightened several times, still there is always water, just as on the picture. In Tambak Lorok the floods in the streets happen

more often compared to Kota Lama. The government is helping the people, but they have to contribute themselves as well, especially in Kebon Harjo and Tambak Lorok. In these parts of Tanjung Mas, some RT's are collecting money to heighten the roads. According to respondents 5 (M-KH), 7 (M-KH), 4 (M-KH) and 7 (F-KH). Respondent 6 (M-KL) mentions that the government did not only heighten the road, they also changed the material, bricks instead of concrete, so the water can disappear more easily when there is a flood. However, for some people it is not even possible to heighten the roads, since the water from the streets runs into their houses then, and they are not able to heighten their house, because a lack of money.

Financial capital

The financial capital will focus on jobs, the ability to save money and the way in which the respondents have enough money to protect themselves and their belongings. This last part is already discussed in the section about the physical capital, since all assets are closely related to each other. All of the respondents do have a job, just like the other people in their households. Only children that are still going to school do not have a job. Most of the time the floods do not have an influence on the jobs. However, there are some exceptions. Respondent 4 (F-KL) has her own shop, and she also charges parking fees in her street as an additional job. The floods have a big influence on her job, because she needs to close her shop and she will have less clients, so she is not able to earn money. This is the same for respondents 5 (F-KL) and 4 (F-KH). In Tambak Lorok respondent 4 (M-TL) mentions that it does influence his oyster farm:

"The oysters live in the bamboo, they stick to the bamboo. And sometimes when the big waves comes, the oysters lose and die. Also with the big winds" (Respondent 1 (M-TL)).

In Kota Lama almost all respondents mention that they are able to save a little bit money, however for different reasons. Respondent 1 (M-KL) is saving the money in case of a flood, to protect himself and his house. A lot of money is already used to heighten the house, so the floods do have a negative effect of the financial asset, since people are not able to save enough money or to protect themselves in the future. Respondent 4 (F-KL) is saving money in case she needs it for her health, respondent 7 (F-KL) for the school of her children and respondent 5 (F-KL) told that she is able to save, but not every month, it depends on the conditions. In Kebon Harjo only respondents 3 (M-KH) and 4 (F-KH) are not able to save any money, but respondent 3 (M-KH) has enough money to make a living. Respondent 4 (F-KH) mentions that she was able to save money before the floods became worse, but at this point she has no money to save. In Tambak Lorok most people are not able to save. Only respondents 3 (M-TL), 2 (F-TL) and 6 (M-TL) mention that they are able to save a little bit

money. The lack of money also has a clear influence on the rest of the Sustainable Livelihood Framework, since people are not able to take measurements to better their livelihoods and to come out of the negative vicious circle, as described in Chapter 2.

Social capital

In this chapter the social capital will be discussed, separated in the neighbourhoods of the respondents, their family and how they can offer help to deal with the floods, and the way in which the government is helping the respondents. First it is important to make clear that when the respondents talk about their neighbourhood, they mean their street, or the few houses around their house, not much more. In Kota Lama, except from respondent 7 (F-KL) all respondents in Kota Lama think that the neighbourhood is very individualistic and that there is no real cooperation when there is flooding, and also in other cases. Respondents 4 (F-KL) and 5 (F-KL), think that it is a good neighbourhood, but still they mention that everything is very individualistic. According to respondent 2 (M-KL) the cooperation is not really good when there is a flood, but only when there is a victim of criminality. In Kebon Harjo the social relation in the neighbourhood is a little bit better already. All of the respondents there mention that they live in a good neighbourhood, however, when it comes down to the floods, half of the respondents, 4 (F-KH), 6 (F-KH) and 7 (M-KH), feel that it is very individualistic, since people only take care of themselves and their own belongings. Respondent 1 (F-KH) is the only one that has a real close relation with her neighbourhood and they offer each other a lot of help. With the floods, but also in other things in life, like weddings for example. Respondent 7 (M-KH) does mention that during a flood, everyone is very individualistic, but afterward, the people in his RT clean the environment and especially the canals. But he also said that this is very rare among the people in Kebon Harjo, it only happens in his RT.

In Tambak Lorok the social relation during a flood is best, next to the fact that almost all people experience their neighbourhood as a good neighbourhood. Respondents 1 (M-TL) and 3 (M-TL) told that during a flood most people act individualistic, but according to respondent 1 there are some people that help during a flood. His wife, who is pregnant, may sleep in other houses when there is a high flood, for example. Respondents 2 (F-TL) and 6 (M-TL) also said that sometimes people offer help, respondent 2 opens her house for other people, because her house is higher than others. And respondent 6 experiences help during floods, because people in his street help each other by putting their belongings in higher places. According to respondent 4 (M-TL) people in his neighbourhood always offer each other help with flooding. For example when his boat was loosened by the waves a few days before the interview, a lot of people helped him to control the boat again.

All respondents in Tanjung Mas have a good relationship with their relatives that live outside of Tanjung Mas, however only one would like to move there to avoid the floods. This is respondent 4

(F-KL), who mentions that she thought about it. But not at this point of her life, because she still needs to earn money, which she can do with her shop in Kota Lama. Maybe when she gets older she wants to move to her family house outside of Tanjung Mas. In Kota Lama, respondents 3 (F-KL), 5 (F-KL) and 7 (F-KL), even have the feeling that the government is not doing anything at all, not with the floods and not with other things in their daily life. This is the same for respondents 4 (F-KH), 5 (M-KH) and 4 (M-TL). According to respondent 3 (M-KH) the government did help with free access to clean water in the past, but nowadays they do not help anymore. According to all the other respondents, the government does help with the roads, however, as mentioned above, the inhabitants of Tanjung Mas have to contribute themselves as well. Especially because the government is corrupt and keeping money for themselves instead of spending it in the district, according to respondent 1 (M-KL) and 2 (M-KL). And next to that the measurements are not always adjusted to the needs of the people. So the government would do a better job maybe, if they listen more closely to these needs, and the inhabitants would feel less disappointed as well if their opinion is taken into account. In Tambak Lorok there are also a few respondents who mention that they get free medicines from the government. But this has nothing to do with the floods, only because the people in Tambak Lorok are very poor. Respondents 3 (M-TL) and 7 (F-TL), want the government to deal with the floods on the long term, by building a big dyke. However, the government is not yet doing something about this.

Human capital

The human capital is about the skills and other factors in the life of the inhabitants themselves, in this case separated into education and health. In Kota Lama, most respondents did not even finish their elementary school, or they did not go to school at all. Except respondent 1 (M-KL), 5 (F-KL), and 6 (M-KL) they went to senior high school. Also all their partners did not get more education than senior high school. Most children are still at school, but only two of them are going to university, the two daughters of respondent 1 (M-KL). The other children are still too young or are already working. In Kebon Harjo, none of the respondents has a higher level of education than senior high school, and respondent 4 (F-KH), did not even finish her elementary school. Their partners and children do not have a higher education level as well. Only the two daughters of respondent 6 (F-KH), whose husband is a teacher himself, are going to university. The children of the other respondents are still too young, or already working. Respondent 2 (F-KH) mentions that she does not have enough money for her children to let them study, she is trying to save money for that. The education level in Tambak Lorok is lower compared to the other parts of Tanjung Mas. Of all the respondents only respondent 1 (M-TL) and 3 (M-TL) have a higher education level than elementary school. But not higher than senior high school. Of all the partners and children, none is having a higher education level than senior high school. And all the older children are already working.

Not all of the respondents are dealing with health problems due to flooding. Respondents 5 (F-KL) and 6 (M-KL) mention that they had skin problems several times, and respondents 6 (M-KL) also had to deal with fever because of the floods. Respondent 4 (F-KL) had more problems with her health, she got an infection of her lungs because of the floods, which did cost her about four billion rupiah. In Kebon Harjo, only respondents 2 (F-KH) and 5 (M-KH) never had health problems because of the floods. All of the other respondents did suffer at least from skin problems due to the floods. Just as the other people in their families. Most of them buy their medicines from a shop, but respondent 4 (F-KH) mentions that she can get free medicines from the government, especially for poor people in areas like Tanjung Mas. Respondent 3 (M-KH) told that these skin diseases are very common for people around here, for him it feels like normal, because it happens so often. Next to skin problems, respondent 1 (F-KH) got diarrhea because of the floods. She had to go to the hospital which was around 1 billion rupiahs for those 2 days. In Tambak Lorok, except for respondents 3 (M-TL) and 6 (M-TL) all respondents suffer from health problems due to the floods, all of them have skin problems. Most of these respondents, 1 (M-TL), 2 (F-TL) and 7 (F-TL), get the medicines they need for these skin problems for free from the government. Respondent 5 (F-TL) is mentioning:

“My son ever suffered the worst skin disease. And maybe because of floods, but maybe also because of the wind because the wind brings viruses. And he need to be in the hospital. And luckily, we got an insurance from my husband’s job. And we need to pay only 300.000 for the hospital. But still a lot for us” (Respondent 5 (F-TL)).

Floods and livelihood in Tanjung Mas

In the end of this chapter, after explaining the four different assets of the inhabitants of Kota Lama, Kebon Harjo and Tambak Lorok, the second sub question will be answered. And there will be discussed what the differences are between these parts of Tanjung Mas.

How are the floods affecting the livelihoods of the inhabitants of Tanjung Mas, Semarang?

The physical capital is best in Kota Lama and worst in Tambak Lorok, as expected. In Kota Lama and Kebon Harjo the houses are mostly made of concrete, while in Tambak Lorok, most houses are partly made of wood. Almost all people in Tanjung Mas did heighten their houses at least once. However in Tambak Lorok it still happens very often that the water comes inside the house, sometimes 14 days a month. While in Kota Lama this happens rarely. When we spoke about the belongings of the

inhabitants, all people put them in a higher place when the water is coming inside. However, in Tambak Lorok people have many damaged belongings, especially electronics, because of the floods. The respondents there also mention that they are not really able to protect their belongings, while in Kebon Harjo and Kota Lama, most respondents feel able to protect them. They also do not have that many broken things due to the water. Access to electricity and water is good everywhere. Only the quality of the water is not always that good, it becomes darker and more salty because of sea water intrusion. Interesting is that the people in Tambak Lorok do not feel any problems with clean water at all. For the electricity, their situation is again worse compared to the other parts in Tanjung Mas. Sometimes the electricity is not working without a reason. In the other parts it is sometimes turned off because of the heavy rain, but in Tambak Lorok it is sometimes not working at all. In all neighbourhoods the situation with the roads is the same, they are heightened many times, so the water was not in the street anymore every day again. The government is helping the people, but they have to contribute themselves as well. So for the physical capital, we can conclude that, just as expected, the situation in Tambak Lorok is worst, and they also experience more problems and influences of the floods on this asset. In Kebon Harjo the situation is a little bit better again, but in Kota Lama the situation is best, compared to the other parts of Tanjung Mas. However, this does not mean that the people in Kota Lama are not vulnerable at all, because their physical capital is still suffering from the water.

The Financial Capital is best in Kota Lama, and worst in Tambak Lorok again. Even though all people have a job, the jobs in Tambak Lorok are most vulnerable for floods, but generally the floods do not have a big influence on the jobs. Almost all respondents in Kota Lama can save some money, in Kebon Harjo only half of them and in Tambak Lorok no one can. The financial capital is also influencing the rest of the Sustainable Livelihood Framework. It has a controlling influence on the livelihood strategies. So even though the other parts of the vulnerability assets would be very strong, if there is a lack of money, still not a lot of measurements are possible. Other controlling factors can be related to the government for example, even though this is not directly the case in this research. Therefore maybe a controlling factor should be included in the Framework, from the vulnerability to the strategies.

When we asked questions about the social capital, the neighbourhood was perceived as good for the respondents in Kebon Harjo and Tambak Lorok, and as individualistic in Kota Lama. However, when it comes down to the floods, almost all respondents in Tanjung Mas say that people are very individualistic. Only a few people are helping each other with giving food or offering a dry place to sleep. Only in Tambak Lorok, there are more people that help each other during the floods, also by helping to bring belongings to a higher place. The family the situation is the same in whole Tanjung Mas. The relationship is good, but no one wants to live with their families to avoid the floods. People

in Kota Lama and Kebon Harjo especially are very disappointed about the government. Sometimes they are helping with the roads, but there is also a lot of corruption, so people need to pay more themselves when they want to heighten the roads. In Tambak Lorok the government is helping with the medicines as well, but most people here feel disappointed as well, especially since they do not feel like the government is doing something about the floods on the long term. For the human capital, the education level in Tambak Lorok is also the lowest, and highest in Kota Lama and the health situation as well. In Tambak Lorok all people experience skin diseases because of the floods, in Kebon Harjo only a few and in Kota Lama only one.

To conclude, based on the experiences of the respondents of Tanjung Mas themselves, the livelihoods are already quite vulnerable in all parts of the neighbourhood, since their physical capital is not fully protecting them, their financial situation is most of the time not good and sustainable, people do not help each other that much when they need it because of individualism, the education level is quite low and people deal with health problems. Most of these assets did become even more vulnerable because of the floods, as explained above. It seems like the different assets are individual boxes while discussing them, however, while reading the story above and especially while listening to the respondents themselves, it becomes clear that the assets of vulnerability are closely related. For example when talking about protection of the physical assets where the financial assets are needed for. Therefore it would be good to change the vulnerability diagram in the Sustainable Livelihood Framework by making the distinctions between the different assets not as static lines, but as smooth transitions. However, the floods are clearly influencing the livelihoods of the inhabitants. Next to that, a clear distinction can be made between the different parts of Tanjung Mas, with the worst situation in Tambak Lorok, and the best in Kota Lama.

7. Migration

In the final chapter of the analyzing part of this thesis, discusses the relation between the changed livelihoods because of the floods and the decision of migration. This decision is based on two parts, as discussed in Chapter 2, the (im)mobility by the Threshold Model, which is looking at the indifference of people, and their keep, repel, push and pull factors to migrate. The other approach is the decision-making process by the Theory of Planned Behavior, which is trying to understand behavior by looking at the attitude, social norm, and perceived behavior control. In this chapter it is tried to answer the following sub-question:

What is the interrelation between the livelihoods which are affected by floods, and the perception of migration by the inhabitants of Tanjung Mas, Semarang?

By answering this question we can get a better understanding about how the respondents in Tanjung Mas, divided into the three parts of this neighbourhood, perceive migration in relation to their livelihoods and thereby the floods.

(Im)mobility

Indifference factor

In Kota Lama there are three respondents, 4 (F-KL), 5 (F-KL) and 7 (F-KL), that never thought about migration at all, in Kebon Harjo this are two respondents, 3 (M-KH) and 6 (F-KH), and in Tambak Lorok four, 2 (F-TL), 3 (M-TL), 4 (M-TL) and 5 (F-TL). Not because of the floods and not because of other reasons. This means they are still in the stage of indifference, since they did not cross the threshold to consider migration. Most of them live from day to day and do not think about the consequences in the future. This means that they do not have any opinions about migration, since they did never think about it.

Belonging

Except from respondent 5 (M-KH) who is not originally from this area, all respondents feel like they belong in Tanjung Mas. Most of them feel comfortable in the place they live and they do not have direct plans to move out, since they have an emotional bounding to this place. However, this feeling of comfort is not mentioned many times in Tambak Lorok. Next to the feeling of comfort, earning money in a certain area is also very important for the feeling of belonging. In Indonesia there is the

culture that if people can earn money in an area, they are fortunate and they belong there, since they feel like they will not earn money if they go to another area, as respondent 3 (M-KH) explains:

“This area means like suited to you, like you and that is your destiny. This is like a local culture. In Indonesia, there is a local culture, that if you live in an area an you can get more prosperity, so that means the area is a good area for you, and not for other people. And from that area you can get blessed” (Respondent 3 (M-KH)).

This is the same for respondents 3 (F-KL), 5 (F-KL), 7(F-KL), 3 (M-TL), 4 (M-TL), 5 (F-TL) and 7 (F-TL). Other reasons of feeling belonged are related to family. Respondent 1 (F-KH) wants to live close to her family, especially her children and grandchildren. And respondent 6 (F-KH) said that her children do not want to move out, so that makes her feel like belonging in that area, because she belongs to be close to her children. Respondents, 3 (F-KL), 5 (F-KL) and 7 (F-KL), mention that they got the house they live in, from family or someone else, so they feel like they need to take care of that house.

Respondent 3 (M-TL) has an interesting reason as well, which is related to the feeling of belonging. Just like respondent 1 (M-KL), who is RT in Kota Lama, does he feel responsible for the area and the people that live there. He is a RW in Tambak Lorok as well and he told that he helped the neighbourhood to become less criminal:

“I was also a drunk man in the past, but now not anymore. It is already ten years ago. Now I made friendship with the other drunk people and I often also bought the alcohol for them. And now they got bored and now they don’t drink anymore. So most of them now start to pray in the mosque, instead of drinking. There are so many people out of Tambak Lorok. They come here and they got drunk here in the area. And he always keeps watch of them. And he comes to the area and he got angry with them. And until now they not coming anymore” (Respondent 1 (M-KL)).

So what he meant to say is that when he supplied the people with alcohol, they got bored of it. At the same time he told the people his own story about his transformation from a drunk man into someone who found peace in praying. Now he feels responsible for them, which influences his feeling of belonging in this neighbourhood. The feeling of comfort is bigger in Kota Lama compared to Tambak Lorok, where the culture of earning money is more important. This can be related to the floods, because in Tambak Lorok suffers more from floods, people feel less comfortable there.

Decision to stay

The decision to stay is determined by the keep and repel factor. While asking questions about these factors, you would think that people who are in the stage of indifference did not answer these questions. However, they did, so are people really indifferent if they are in the stage of indifference? Since they can answer these questions, they must have thought about migration before. People do not really have reasons for certain areas that repels them from moving there. Especially, since most respondents never made real plans to move somewhere. Respondent 5 (F-KL) is the only one that mentions that she does not want to live in the same place as her family, since they also got flooding, or they live too far away. Another reason according to her is because these other areas are so quiet and she loves the crowd. Respondent 1 (F-KH) at least knows that she does not want to move to Jakarta, because she experienced it already when she visited the city a few years ago. It was too busy and crowded, so she did not feel comfortable. This repels her from moving to Jakarta. According to respondent 2 (F-TL), who thought about moving to a certain place because family is living there, a big repel factor is that the situation with the floods in that place is even worse compared to the place she is living now. The other respondents did not mention repel factors.

Next to the repel factor the keep factor is important in the decision to stay, which is closely related to the feeling of belonging because the feeling of comfort and because the ability of earning money in Tanjung Mas. Not only because of the culture, but also because the jobs themselves. For example, in Tambak Lorok, a lot of people are fisherman, so they depend on the sea. The main reason what keeps people in Tanjung Mas is the lack of money, which makes them unable to move. Which is the case of respondents 2 (M-KL), 3 (F-KL), 6 (M-KL), (M-TL), 4 (M-TL) and almost all people in Kebon Harjo. According to respondents 1 (M-KL), 5 (F-KL) and 5 (F-TL), centrality and accessibility of the area is also an important point to stay in Tanjung Mas. Respondents 7 (F-KL) and 2 (F-KH) feel responsible for the house, since they got it from their mom and they promised to take care of it, and because there are a lot of memories inside it. Together, the keep factors have a greater impact than the repel factor. This can be related to the fact that most people do not have actual plans to move out of Tanjung Mas. The differentiation between the different parts of Tanjung Mas is mostly related to the lack of money. In Kota Lama people do have more money, which already became clear while discussing the financial asset, compared to Kebon Harjo and especially Tambak Lorok. However it seems like the lack of money plays a more important role in Kebon Harjo than Tambak Lorok, but in Tambak Lorok more people are in the stage of indifference. They did not answer this question, since they did not think about migration.

Decision to go

The decision to go is determined, according to the Threshold Model, by the push factors of the area people live in and the pull factor of the area people want to move to. Since most people did not

make real plans of migration, there are not that many pull factors. Only respondent 6 (M-TL) is already making plans to migrate, to the place his new wife is from originally. That is why he wants to go there, which is a big pull factor, even though the people in that area suffer from floods as well. Other pull factors are mainly related to family. Respondents 5 (F-KL), wants to take care of her mother. Respondent 6 (F-KH) is pulled to a higher place to avoid the floods. These floods are also the main push factor in Tanjung Mas. According to respondents 2 (M-KL), 5 (F-KL), 6 (M-KL), 4 (F-KH), 1 (M-TL), 4 (M-TL) and 7 (F-TL) the push factors are related to floods. These respondents are tired of the floods, and tired to spend money on repairing and protecting their houses. However respondent 5 (F-KL) mentions as well that she does not really want to move out because of this, the floods just annoy her. The second push factor in the decision to go is that the life in Tanjung Mas is not good enough, so people want to move to gain a better living, sometimes related to the children, which is the case for respondents 2 (M-KL), 3 (F-KL), 7 (M-KH) and 1 (M-TL). Other reasons are related to criminality in the neighbourhood, and the feeling of not belonging in this place. So the spatial differentiation in the push and pull factors is not that big since the main reason to go, for all respondents who are not in the stage of indifference, are the floods. However, when listening to the respondents, the push and pull factors are less important and from less influence on the decision to migrate, compared to the keep and repel factors. Which results in the decision to stay, instead of the decision to go.

Decision-making process

Attitude

The attitude is in a certain way already discussed while talking about the immobility of the respondents, since they are in the stage of indifference so their attitude is automatically negative about migration, as you can read above. This makes clear already how much the Threshold model and the Theory of Planned Behavior are related to each other. From the other respondents, only in Kebon Harjo there are two respondents who thought about migration, and have a negative attitude towards it. Respondents 1 (F-KH) and 7 (M-KH) did think about it, but for now they do not want to move. Respondent 1 did not make plans and respondent 7 decided that he wants to stay, but he mentions that he does not know what his family thinks about migration. The other respondents are quite positive about migration. Respondents 1 (M-KL), 2 (M-KL), 6 (M-KL), 2 (F-KH), 4 (F-KH), 5 (M-KH), 1 (M-TL) and 7 (F-TL) are mentioning that they do want to move out and their push and pull factors are already discussed above. We also already discussed respondent 6 (M) who already has plans to move out of Tambak Lorok, and Respondent 3 (F-KL) wants to move out as well, but she has the restriction that she still wants to live in Semarang, so she mentions a restriction. The other

respondents did not mention any restrictions. But that does not mean that they do not have any, because they probably did not think about real plans yet.

Social Norm

The way people think about migration in their neighbourhood is related to whether people are already used to migration or not. Therefore first a small description about migration in Tanjung Mas is given, based on the experiences of the respondents. In Kota Lama, almost no one moves into the area, only respondent 1 (M-KL) and 5 (F-KL) mention that sometimes someone moves in because of marriage, but this is not happening often. Also not a lot of people move out according to all of the respondents. Respondent 1 (M-KL) and 4 (F-KL) told that people only move out for marriage and change in job, and respondent 2 (M-KL) mentions that people only move when they have enough money. In Kebon Harjo also not a lot of people move out for the same reasons. However, there are a lot of people moving into this part of Tanjung Mas. Respondents 2 (F-KH), 3 (M-KH), 4 (F-KH), 5 (M-KH) and 7 (M-KH) think that the main reason is because Kebon Harjo is a crowded area, next to the harbor, so it is easy to get a job and to earn money here. This is the same in Tambak Lorok, according to almost all respondents. But there are also more people that experience people moving out of the neighbourhood for different reasons. Respondent 1 (M-TL) and 3 (M-TL) mention that this is because of the floods, respondent 2 (F-TL) thinks it is because of other jobs, Respondent 5 (F-TL) thinks because people want to have a better life and according to respondent 4 (M-TL) there is only migration out of the area because of marriage. The other respondents think there is no migration out of Tambak Lorok. So migration is experienced as more common in Tambak Lorok, compared to the other parts of Tanjung Mas.

The social norm about migrations differs. However people will not feel like others are holding them back from migration, they still expect others to feel lost if they would move, as they feel lost when other people move out. Especially in Kebon Harjo the feeling of social cohesion is big. Respondent 2 (F-KH) mentions:

“Because in this neighbourhood they are already like a family. That is also holding her back, because she also was born here, there are a lot of memories, that is why she wants to stay here” (Respondent 2 (F-KH)).

So for one respondent in Tanjung Mas, the social norm does have an influence on her decision to move or to stay. In Kota Lama and Tambak Lorok, this feeling of social cohesion is not that big. In Kota Lama still some people would feel lost, like respondents 1 (M-KL), 2 (M-KL) and 7 (F-KL), but for the rest of them it does not matter if the other people move or stay. In Tambak Lorok almost all

respondents would not feel lost, or expect others to feel lost. This can be related to the fact that in Tambak Lorok people are more used to migration out of the area.

Control

Next to the attitude towards migration and the social norm, there are also perceived control factors that influence the eventual decision to migrate. The biggest controlling factor is the lack of money according to most of the respondents all over Tanjung Mas. Just like one of the main keep factors in the decision to stay. Other reasons are related to the keep factor as well. Like jobs, family reasons, because people have to take care of the house and the feeling of responsibility of the neighbourhood, all explained above. Another controlling factor to stay, mentioned by respondent 1 (F-KH) is age, she feels she is too old to migrate. A final reason of control to stay is, as mentioned in Chapter 3 children are only allowed to move out of their parents house if they are married. Which means that even if they want to, they are obligated to stay. Control also works the other way around. As respondent 5 (F-KL) told that she is afraid that she is obligated to move out, since she is staying on the land illegally, this means that the government may control her decision to migrate. There is no differentiation between the three parts of Tanjung Mas in the perceived behavioral control.

Perception of migration in Tanjung Mas

In this chapter we discussed how the inhabitants of Tanjung Mas perceive migration because of the changed livelihood by the floods, in order to answer the third sub-question:

What is the interrelation between the livelihoods which are affected by floods, and the perception of migration by the inhabitants of Tanjung Mas, Semarang?

The perception of migration is determined by the immobility, based on the Threshold Approach, and the decision-making process based on the Theory of Planned Behavior. The (im)mobility of the people in Tanjung Mas is used in order to understand if the inhabitants of the neighbourhood are very passive about migration or if they did think about migration as an option. If people are very passive about migration, they are in the stage of indifference. In every part of Tanjung Mas there are 2 to 4 people that did not think about migration at all. This means that almost half of all the respondents are very passive when it comes to migration. However it is important to acknowledge that even in the stage of indifference, people did in one way or another think about migration, which became clear when we talked about the keep, repel, push and pull factors. So is the stage of indifference really indifferent? Maybe there must be a stage in between in which people somehow did think about migration, but decided very quickly that they would not migrate. That they therefore did not become active in weighing arguments to stay or to go. When listening to the stories carefully,

this passiveness can be related to the local culture that people live by the day. They do not really think about the future. The other half of the respondents did think about migration, so they crossed the indifference threshold, however, migration is only an option and a 'real' plan for very few of them.

The feeling of belonging is closely related to the indifference factor, because when you feel like you belong somewhere, why would you think about migration? There are two very important reasons why almost all the respondents in Tanjung Mas do feel like they belong in their neighbourhood. The first one is because they feel comfortable. They are used to the life there and they know everything and everyone around, so they feel home. The second reason is because the culture that if you can earn money in a certain region you belong there, which is explained above. As mentioned before belonging is the most important keep factor as well. Other important reasons are the lack of money for half of the respondents and the fact that they have a job which they cannot continue when they move. There are not that many repel factors, since people did not think about real plans to move to another place. Next to the decision to stay there are also some push and pull factors that influence the decision to move. The biggest push factors are the floods and the bad living standards, so people want to have a better living when they move. These living standards are influenced by the floods as well, as discussed in Chapter 6. So The floods are also an indirect push factor. Another smaller push factor is the criminality in some parts of the neighbourhood. There are not that many pull factors, for the same reason as for the repel factors. But some things are mentioned, for example family and a higher place to avoid the floods as pull factors. In the end, from the people who did think about migration and are in the stage of activeness, the keep factor is still much bigger compared to the push factor, which means in most cases that people decide to stay. Not always because they do not want to, but also because they are not able to. The main differentiation between the different parts of Tanjung Mas is related to the lack of money. In Kota Lama people do have more money, compared to Kebon Harjo and especially Tambak Lorok. However it seems like the lack of money plays a more important role in Kebon Harjo than Tambak Lorok, but in Tambak Lorok more people are in the stage of indifference.

The Theory of Planned Behavior is used to get to know the attitude, the social norm and the perceived behavioral control about migration. The outcomes are very much related to the Threshold Approach, but some new insides were done. The attitude towards migration is very different, since half of the respondents is negative about migration and the other half is positive. Most of the respondents who feel negative about migration are still in the stage of indifference as well. The social norm about migration is especially related to the neighbourhood in which the people live now. In Kota Lama and Tambak Lorok there is not a lot of migration, not into the neighbourhood, and also not out of the neighbourhood in the case of Kota Lama. The only migration is because of marriage or

work, and a few because of the floods. In Kebon Harjo there is more migration into the neighbourhood because of the possibilities of work. In Tambak Lorok more people moved out, because of all different reasons. However it does not really seem like it does influence the decision to move. In Tambak Lorok for most of the people it does not matter if someone in the neighbourhood moves out. They also think that the other persons would not care if they would move out themselves. In Kota Lama a few more people would feel lost if their neighbours would move and the other way around. In Kebon Harjo the social cohesion is biggest. Most respondents would feel lost if other people would move out, and they expect others to feel lost as well. And there is even one respondent that mentions that this plays a role in her decision to move. The perceived behavioral control is the last part of the Theory of Planned Behavior. The lack of money is the biggest controlling factor, next to their jobs. There is also a controlling factor that may obligate people to move out, since most of the houses are built illegally on land of the government. So this works the other way around.

In conclusion, while analyzing the different aspects of the perception on migration, that it is not a real option for the inhabitants of all parts of Tanjung Mas. Even though half of the respondents has a positive attitude about migration, and the social norm does not play a big role in the decision-making process. The perceived behavioral control is that big, most people are not able to move out, especially based on the lack of money. Which is biggest in Tambak Lorok and makes it not that logical for them to move out of Tanjung Mas. In Kota Lama this lack of money is not that big, as shown in Chapter 6 in the part about the financial assets, but still people will not move. So by both the Theory of Planned Behavior and the Threshold Model it becomes clear that generally speaking, the people will not move out. First of all because they are not able to, but secondly because they do not see the big impacts the floods will have in the future, since they live by the day.

8. Conclusion and reflection

Conclusion

This research is attempted to contribute to a further understanding of the impact of environmental changes on the perception about migration. Not a lot of research is done about the question why people do not migrate instead of why they do migrate, which made it academically relevant to do this research. And because the contribution to the three different theories as well. This thesis is socially relevant as well. Because of several factors, as land subsidence and the rising sea level, the floods will become worse in the future, but how do people deal with this? It is tried to get to know more about the experiences of the inhabitants of Tanjung Mas, Semarang, about the floods and its increasing impacts on their livelihood and their perception about migration. The main question of this research was therefore:

What are the effects of floods on the livelihoods of the coastal inhabitants of Tanjung Mas, Semarang, and how can its relation to the (im)mobility of the inhabitants and the decision-making process to migrate be understood?

The main question was set up in three parts. First the experiences of the respondents about the floods were described, second the effects of the floods on the livelihoods of the people, and third its relation to the perception about migration. All of this based on the experiences of the inhabitants, because if we are only able to understand phenomena in the context and by the experiences of individuals, it is possible to get a clear view about what the floods do mean for their livelihoods and their view about migration.

According to the literature and the experts, the situation with the floods is becoming worse. Tanjung Mas suffers from land subsidence of ten centimeters every year, which means that the inhabitants need to heighten their house with half a meter every 5 to 7 years to avoid the floods. The part of Kota Lama has the best situation, followed by Kebon Harjo and Tambak Lorok. When the experiences of the inhabitants themselves were analyzed, almost the same conclusion was found. In Kota Lama people experience not that many and high floods, only occasionally in combination with heavy rains. Generally the water does not come into the house and people experience it as a part of their normal life. In Kebon Harjo and Tambak Lorok people do feel scared and worried sometimes when there is a high flood. But in these neighbourhoods the water comes into the houses quite often. Especially in Tambak Lorok where in some parts the water comes into the houses half of the

month. The causes of the floods, according to the inhabitants, differ from the causes found in the literature and told by the experts. Instead of the land subsidence and the rising sea level, the bad drainage system and the reclamation of the fishponds are mentioned as the main causes. This means that the inhabitants do not really understand that their situation will become increasingly worse in the future, so they will not take any steps to protect themselves on the long term at this moment.

The effects of the floods on the livelihoods is based on the sustainable livelihood theory, using livelihood assets; physical, financial, social and human assets. The natural capital is left outside, since in the case of the floods, things as wildlife and biodiversity, do not play a role in the livelihood of the inhabitants. The physical asset is best in Kota Lama and worst in Tambak Lorok, as expected. The houses are in a better condition and the water does not come that much inside the house, so the belongings of the people in Kota Lama are not damaged that often. In Kebon Harjo and Tambak Lorok people do have more broken belongings due to the floods, especially electronics. But there is a distinction between Tambak Lorok and Kebon Harjo as well, because in Tambak Lorok the inhabitants do not feel able to protect their belongings, while in Kebon Harjo they do feel able. The electricity in all parts of Tanjung Mas is quite good, just as the water. Only sometimes people do experience a bad quality of the water because of the floods, but this is not mentioned often. In all neighbourhoods the situation with the roads is the same, they are heightened many times, with help of the government. However the situation in Kota Lama is better compared to the other parts of the neighbourhood, this does not mean that the people in Kota Lama are not vulnerable at all, because their physical capital is still suffering from the water.

For the financial asset the situation is best in Kota Lama and worst in Tambak Lorok again. Even though all people have a job, the jobs in Tambak Lorok are more vulnerable for the floods, because they are mostly fisherman and depend on the sea. But most jobs do not suffer from the floods. In Kota Lama people are a little bit more able to save money compared to the other people. The financial capital is also influencing the rest of the Sustainable Livelihood Framework. It has a controlling influence on the livelihood strategies. So even though the other parts of the vulnerability assets would be very strong, if there is a lack of money, still not a lot of measurements are possible. Other controlling factors can be related to the government for example, even though this is not directly the case in this research. Therefore, for further research maybe a controlling factor should be included in the Framework, from the vulnerability to the strategies.

When we asked questions about the social asset the neighbourhood was seen as good in Kebon Harjo and Tambak Lorok, and as individualistic in Kota Lama. However, when it comes down to the floods, almost all respondents in Tanjung Mas say that people are very individualistic. For the family the situation is good for all people in Tanjung Mas. All people feel disappointed about the government. Sometimes they are helping with the roads or medicines, but there is also a lot of

corruption and they do not do anything about the floods on the long term. Besides, the government is not really listening to the people and their needs. For the human capital, the education level in Tambak Lorok is also lowest, and highest in Kota Lama, and the health situation as well. In Tambak Lorok all people experience skin diseases because of the floods, in Kebon Harjo only a few and in Kota Lama only one. Most of these assets did become even more vulnerable because of the floods, as explained above. So the floods are clearly influencing the livelihoods of the inhabitants. Next to that, a clear distinction can be made between the different parts of Tanjung Mas, with the worst situation in Tambak Lorok, and the best in Kota Lama. It seems like the different assets are individual boxes while discussing them, however, while reading the story above and especially while listening to the respondents themselves, it becomes clear that the assets of vulnerability are closely related. For example when talking about protection of the physical assets where the financial assets are needed for. Therefore, for further research it would be recommended to change the vulnerability diagram in the Sustainable Livelihood Framework by making the distinctions between the different assets not as static lines, but as smooth transitions.

The (im)mobility of the people in Tanjung Mas is understood by using the Threshold Approach to understand if the inhabitants did think of migration or not. Half of all the respondents is very passive when it comes to migration, so they are in the stage of indifference. When listening to the stories carefully, this passiveness can be related to the local culture that people live by the day and do not think about the effects the floods may have on their life in the future. However it is important to acknowledge that even in the stage of indifference, people did in one way or another think about migration, which becomes clear when we talked about the keep, repel, push and pull factors. So is the stage of indifference really indifferent? Maybe there must be a stage in between in which people somehow did think about migration, but decided very quickly that they would not migrate, and therefore did not become active in weighing arguments to stay or to go. So for a further research I would recommend to look at this missing stage in the Threshold Model, in order to get a more realistic view on the (im)mobility of people. The feeling of belonging is closely related to the indifference factor as well, just as the keep factor, in the decision to stay. There are two very important reasons why almost all the respondents in Tanjung Mas do feel like they belong in their neighbourhood, because they feel comfortable and because they can earn money in this region, which means that they belong there, according to their local culture, as explained several times above. Next to this, the keep factor is also influenced by the lack of money of the respondents to move and because they are not able to change their jobs. There are not that many repel factors, since people did not think about real plans to move to another place. There are also some push and pull factors that influence the decision to move. Floods are still the biggest push factor, next to the fact that people want to have a better life, because their living standards are not good in their lives at

this moment and place. These living standards are influenced by the floods as well, as discussed in Chapter 6, so the floods are also an indirect push factor. There are not that many pull factors. In the end, from the people who did think about migration and are in the stage of activeness, the keep factor is still much bigger compared to the push factor, which means in most cases that people decide to stay. Not always because they do not want to, but also because they are not able to.

In order to get a better understanding of why people do not migrate, the Theory of Planned Behavior is used to get to know this, by discussing the attitude of the respondents, the social norm and the perceived behavioral control about migration. Half of the respondents has a negative attitude towards behavior since most of them did not think about migration at all. The other half is neutral or positive. The social norm about migration is especially related to the neighbourhood in which the people live now. In Kota Lama and Tambak Lorok migration, in and out, does not happen that often, which is not the situation in Kebon Harjo, so the people there are more used to it. However it does not really seem like it does influence the decision to move, since most of the time people do not really care if other people would move out, and they also do not expect that other people would care if they would move out. Only in some cases people will feel lost, but this does not influence their decision mostly, except from a few people in Kebon Harjo. The perceived behavioral control is the last part of the Theory of Planned Behavior and the lack of money is the biggest controlling factor, next to their jobs, which plays a bigger role in Tambak Lorok than in Kebon Harjo and especially Kota Lama, based on the differentiation in the financial assets. And of course the fact that in the Indonesian culture, children are only allowed to move out of their parents house if they are married. Which means that even if they want to, they are obligated to stay. There is also a controlling factor that may obligate people to move out, since most of the houses are build illegally on land of the government. So according to the Theory of Planned Behavior, just as the Threshold Approach, migration is not a real option for the inhabitants of Tanjung Mas, based on their experiences. Even though they do want to migrate, in almost all cases, they do not migrate. First of all because they are not able to, but secondly because they do not see the big impacts the floods will have in the future since they live by the day.

After discussing all four parts of the main questions, the main question itself can be answered. We can conclude that according to both, the literature and experts, and the inhabitants of Tanjung Mas, the increasing floods do have a bad influence on the different assets of their livelihoods. And even though the difference between the Kota Lama, Kebon Harjo and Tambak Lorok are quite big, still this does not mean that the people in Kota Lama do not suffer from the floods. So this makes people in Tanjung Mas very vulnerable for the floods right now, and even more in the future. Next to that, people do not really think about the future, so they do not take action to better their livelihoods on the long term. They live by the day, which is one of the reasons why

people are not moving out of Tanjung Mas to avoid the floods and to get a better life, which are the main push factors in the experiences of the respondents. The respondents just do not think about migration as an option at all, they belong in a stage of indifference, so mostly their attitude about migration is negative. Besides, if people think about migration there are other aspects that keep them in Tanjung Mas. Things that they perceive as a controlling factor, with the lack of money as the biggest issue. And even though, in the analyzing chapters it became clear there is a big difference between the three parts of Tanjung Mas, with Kota Lama in the best condition, followed by Kebon Harjo, and Tambak Lorok in the worst condition, in the outcome of the perception about migration, there is not that much of a difference. So in the end, even though the floods are affecting, and will increasingly affect, the livelihoods of all of the inhabitants of Tanjung Mas, some more compared than others, people will not move out of the neighbourhood in any way. This again makes clear that migration is an exception, even in the most unlivable conditions. People will accept and adapt to these conditions in order to make the best out of their lives.

Reflection

Despite the fact that the aim of this research is reached and the main question could be answered, there are always things that could have been done better or different. In this part of the chapter a reflection will be given about the progress of this research and the resulting recommendations for further research. Some substantial recommendations are already done in the conclusion above, about the ways in which the used approach could be changed in order to make them more realistic about their view on livelihoods and migration. As mentioned in Chapter 3, the relation between the researcher and the researched is very important in a qualitative research, because of several reasons. It starts by finding the respondents. In the case of this thesis, the respondents were found by going out into the streets and just approach people. This could affect the research, because the respondents do depend on the people who were home at that moment. Inhabitants of Tanjung Mas that work during the day in another place are thereby not able to be interviewed. It is tried to collect some interviews during the weekends as well, but it is still possible that not all inhabitants could have been approached. Next to that, children are most of the time not allowed to do the interview when they are not married and living by themselves yet. That is an important gap in the material used for the analysis.

Next to this, the interviews were conducted with the help of a translator. Because of this, the information the respondents give is not coming purely to the researcher but are also formed by the interpretations of the translator. It is tried to make this interpretations as small as possible, done by a conversation between the researcher and the translator before the interviews were conducted, but for a next research I would recommend the researcher to learn the language him/herself. Or to use

more than one translator for one interview, so the information can be translated as correct as possible. Besides, the background and interpretations of the researcher are important as well. It is important to acknowledge that the process of discovering the universal essence of the experiences of individuals is strongly related to the interpretation of the individual. That is why in the epilogue of this thesis my own view and experiences in Indonesia are describes. But still, in this case it was only one researcher, me, who analyzed the stories. So the conclusions about the stories of the inhabitants are for a big part formed by my opinions and thoughts. There are always important aspects you miss or you do not interpret the way they should be. That is why I recommend, if it is possible, to have one or two other researchers who give their opinion about the experiences of the respondents.

Another point which should be taken into account is the fact that for collecting the experiences of the respondents an interview guide is used. On the one hand it is good to use such an interview guide since you are sure the topics you want to discuss will be covered, but it is possible that you will miss information which is important as well. Next to that the research is done in only one part of one city in Indonesia. To get a better idea about the link between environmental change and migration (or immobility), it would be nice for another research to look at other parts of the city as well, or even other cities or other countries. Finally, in this research, 21 inhabitants of Tanjung Mas were interviewed, but if there was more time and money available it would have been nice to interview more respondents, or to interview the respondents several times over the years to see if there are developments in their perception about the floods and migration.

Finally it has to be mentioned that it could be that the inhabitants of Tanjung Mas did not talk to me in the way they would have done to someone from their own country. I am perceived as a 'buleh', white person in the Indonesian language. This meant that I was invited to the respondents houses very easily and people always wanted to talk to me. Because people in Semarang are not used to foreigners, and they think it is very interesting to meet someone from another country. But on the other hand it can mean that the respondent did not tell their story like they should have done to someone from their own country. Because of that, it was positive there was an Indonesian translator who could make clear that it was important for the respondents, to be totally honest about their answers.

Epilogue

The first time the topic for this thesis came into my mind was about two years ago. I knew about the problems with the floods in Semarang, because during some courses it was already mentioned. However, I did not form a concrete idea about the subject of this thesis until I had a conversation with my supervisor in the first weeks of this master. I looked for more information, read some articles and talked about it with some friends, and I became more and more interested. I always wanted to study abroad, and this was my chance to make a dream come true. With the help of my supervisor I found a place for an internship in Indonesia about one and a half year ago, and that is where my adventure of writing this thesis really started.

One year ago I had my vaccinations and my visa, and I learned something about Bahasa Indonesia, the language in Indonesia, so I was able to move. An ability most people in Indonesia do not have, I understand now. The first month I was traveling with a friend through Indonesia, and I got to know some parts of the culture already. However, I only saw the touristic places and people who are used to 'buleh', the Indonesian word for white people. When I moved to Semarang, and said goodbye to my friend, I noticed that traveling is very different compared to really living in a certain culture. The people in Semarang were not really used to 'buleh', which was a weird experience for me, since a lot of people wanted to go pictures with me, and waved and yelled at me in the streets. I was not even able to cross the street from my living place to the supermarket, without people honking at me from their cars or motorcycles. Luckily I had a lot of friends as well, who did not act weird even though I was a 'buleh'.

As I already mentioned in the preface, my first experience in Tanjung Mas was quite shocking. I already read some articles about the situation and I saw some pictures, but in real life I experienced it as much worse. The houses were in a very bad condition, even though most of them were made (partly) of concrete. You could see that all their belongings were very old and most of the time damaged. Their kitchens not hygienic, they sleep on the floor, and most of the houses do not have their own bathroom. Garbage is everywhere and the drainage system is open. So with a flood, the content of the drainage and all the garbage is floating in the streets and sometimes into the houses. Everywhere I saw rats and cockroaches. So I was especially shocked about the hygienic situation, and a little bit afraid that I would become sick because I had to spend a lot of time in these neighbourhood. However, the more time I did spend in Tanjung Mas, the more I got used to the situation. The people are so kind and welcoming, I almost felt like home because of that. In the end I could even imagine that life in this neighbourhood would not be that bad, and I could imagine that

the people would not want to move out of Tanjung Mas. So next to listening to the stories, I could also understand the perspectives of the respondents about the floods and migration.

When I arrived back in the Netherlands half a year ago, it even cost more effort to adapt to the Dutch culture again, compared to my adaptation to the Indonesian one. Especially when I was listening to the interviews again, I felt a little bit homesick, because I wanted to go back to Indonesia. At this moment, when I write this epilogue, my master thesis is almost finished. It is a product of the things I learned throughout the last two years of my master, and also the three years before, when I started my study. Not only the academic information I acquired in that period of time had its influence on this product, but other things I learned during these years as well. Especially my personal developments. And after all these years of studying, I hope I will never have to stop learning.

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Appendix 1: Interview guide experts

Introduction

I am Fenki Evers, master student in Human Geography at the Radboud University in Nijmegen. I am writing my master thesis about the floods in Semarang and its influence on the livelihoods of the people living in the coastal area of Semarang. Next to that I am examining the link to migration, why people do not move out of the area. Before I am able to conduct interviews and observations in the area itself, I have some open questions left which I would like to ask you.

Is it ok that I record this interview?

General questions

- What is your full name?
- What is your function at Unika and what were your former jobs?
- What is your connection with the floods in Semarang?

Floods in Semarang

- Since when became the floods in Semarang a real problem?
- What are the main causes of the floods?
- What are the effects of the floods on the...
 - Buildings and infrastructure?
 - Lives of people?
 - Jobs?
 - Health?
 - Mobility?
 - Vulnerability?
 - Migration?
- How do you think it will develop in the future?

Villages and people

- What villages are affected?
 - Can you show it on a map?
 - What do you know about Tanah Mas, Tembak Lorok and Kemijen? (good examples for my research? Why? What are the differences?)
- How do the people experience the floods according to you? (does vulnerability play a role?)
- What are they doing to deal with the situation? (adaptation & mitigation and link to vulnerability?)

Mobility and migration

- Do people think of migration as an option? (why (not))
- If they do think of it, do they planning to do it as well? (why (not) and link to vulnerability and mobility)
 - If not, what is holding them back?
 - If yes, where do they go?

Government

- Can you explain the system of the government in Indonesia?
 - What about the local government, and the heads of the neighbourhoods?
- Is the government seeing the problems of the floods? Why (not)?
- What is the government doing about the floods?
 - Adaptation or also mitigations?
 - What about the polder in Kemijen?
 - What do they think about the future?
 - Do they facilitate migration? How? And what do they think about it?

Appendix 2: Interview guide inhabitants

Introduction

Nama saya Fenki. Saya dari Belanda dan saya belajar di Unika di Semarang. Say bicara bahasa Indonesia tidak baik, jadi saya membawa penerjemah ; Jeany.

My study is about the floods in Semarang and I would like to ask you some questions about the floods and how you deal with them.

General questions

First I would like to ask you some general questions. Is it ok that I record it?

- What is your name? (If you want, I can change your name in my thesis, so it will be anonymous).
- With how many people do you live in your house?
- What relation do you have with those people?
- How long do you live already in this area?
 - If you lived somewhere else, where and why did you move to this place?

Floods in Semarang and vulnerability context

Now I would like to ask you some questions about the floods in your neighbourhood.

- What kind of floods occur in this area? (tidal/rain)
- How many times do the floods occur?
- Did the floods become worse in the last years?
- When was the last time there was a flood? How did you experience it?
- When did the floods become worse?
- Can you remember the time before it became worse? What are the main differences?
- What do you think are the main causes of the floods? And how do you know this?

Livelihood

I would like to ask you some questions about your life and how you deal with the floods

- How big is your house? How is the condition? (using permanent building or not)
- What is your house's status?
- Do you also have other house(s) in other area(s)?
- Do you have family who lived out of this area?
- Are you interest to stay with them?
- How many times do you repair or make higher your house caused by the flood (tidal or rain)?
- How much money do you spend to repair or make higher the house?

- What jobs do you have?
- What is your main job?
- Do you have any part time job (for addition)?
- are you able to save your money every month?
- What jobs do the other people in your house have?

- Did this change because of the floods? How?
- What kind of schools did you finish?
- What kind of schools did the other people in your house finished?

- When there is a flood, what do you do?
- Do you see the floods as a part of normal life?
- What was the impact of the floods on your house and belongings?
- What do you do to protect your house and your belongings?
- Do you have enough abilities and resources to protect yourself?
- In what way do the people in your neighbourhood help each other when there is a flood or to prevent from floods?

- Do the floods influence your health?
- How much money do you spend on medicines?

- How do you have electricity? Did this change since the floods are worse?
- How do you have access to clean water? Did this change since the floods are worse?
- Who takes care of the roads? Did this change since the floods are worse?
- Do you have the feeling that the government is supporting you to deal with the floods? In what ways?

(Im)mobility and decision-making process

I would like to ask you some questions now about the effects of the floods and the relation to moving out of the area

- Did you ever think of moving out of this area because of the floods?
 - Temporary or for always?
 - Did the floods change this thoughts?
- And the other members of your family?
- What is holding you back to migrate?
 - Why do you want to stay?
 - Why are you not able to migrate?
 - Did the floods change this thoughts?
- If you are able to migrate, would you do it? Why (not)?
- What could be a reason to move out of the area?
- If you would migrate, what kind of place does it have to be? Why that kind of place?
- If you migrate, would you have to change jobs?
- Do you have the feeling that the government would help you if you want to migrate? Why (not)?
- Did other people already move out of the area?
- Is there any people who move in this area?
- What will other people in the neighbourhood say if you would migrate? Does that play a role in your decision?
- What do you think if other people should move out of the area?

- Do you have the feeling that other people (from the government) determine if you move out or not?

Thank you very much. I finished all my questions, is there something else about the floods or your life that you want to share with me?

Appendix 3: List of respondents

Part of Tanjung Mas	Number	Name	Sex	Age	Duration stay	Size household
Kota Lama	1 (KL)	Wayan *	Male	45	33 years	4 people
	2 (KL)	Subagyo	Male	50	46 years	3 people
	3 (KL)	Kasmina	Female	53	36 years	3 people
	4 (KL)	Rumilah Maria	Female	50	44 years	1 person
	5 (KL)	Tuti	Female	33	33 years	5 people
	6 (KL)	Siswanto	Male	58	54 years	4 people
	7 (KL)	Warmati	Female	67	67 years	5 people
Kebon Harjo	1 (KH)	Suparmi	Female	59	41 years	4 people
	2 (KH)	Roni	Female	43	43 years	5 people
	3 (KH)	Dariyanto	Male	57	48 years	8 people
	4 (KH)	Subinen	Female	68	66 years	5 people
	5 (KH)	Sahit	Male	17	1,5 years	1 person
	6 (KH)	Adriani	Female	52	28 years	4 people
	7 (KH)	Joko	Male	45	45 years	6 people
Tambak Lorok	1 (TL)	Cantur	Male	25	25 years	5 people
	2 (TL)	Yanti	Female	34	34 years	3 people
	3 (TL)	Haji Marsukan	Male	46	18 years	5 people
	4 (TL)	Marsono	Male	50	44 years	4 people
	5 (TL)	Rohanna	Female	24	20 years	8 people
	6 (TL)	Hartono	Male	54	54 years	4 people
	7 (TL)	Siti	Female	29	20 years	8 people
*Name is changed because of the wish to remain anonymous						