Participation
in Post-Disaster Redevelopment

Opportunities for participatory development
in the redevelopment process of the Lower Ninth Ward in New Orleans.

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1.1 Colophon

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I. Preface

This thesis is the result of the graduation research on participation in post-disaster redevelopment as commissioned by the department of Real Estate & Housing, Faculty of Architecture, Delft University of Technology. It is executed within the Urban Area Development Studio.
II. Acknowledgements

This thesis has come to be under the impeccable guidance of my supervisors, Erwin Heurkens and Sake Zijlstra. I want to thank them both for all the feedback and advise. Their expertise enabled me to constantly guard the scientific values of my research and helped me overcome any obstacle in the process.

I want to thank Yawei Chen for all the guidance and input in the earlier stages of this research. The feedback and incredible knowledge she offered me made this thesis into what it is today.

I want to thank my parents, Marcel and Paola, for their neverending faith in my research.

This research would not have been possible without the help from everyone I met in the Lower Ninth Ward. I also want to thank everyone at the New Orleans City Hall for taking the time and effort to support my research. I sincerely hope that my thesis will help in their ongoing efforts to overcome the impact of Katrina. Special thanks to M. von Nkosi for helping me contact all the experts and professionals I consulted during the process, and for all the hours he sat down to answer my endless questions personally.

I want to thank Kristen and Colbert for all their love and support.
III. **Abstract**

**Purpose**
The purpose of the final thesis is to design a participatory development model capable of enabling residents & local government to form a mutual understanding about planning & implementing post-disaster redevelopments, identifying essential local recovery projects accordingly. This method will tackle known issues in existing models for participation in post-disaster redevelopment. The set-up of the final thesis will lead to two additional end products. First of all, the end results of this thesis will provide clarity on the conception of participatory development for scientists, scholars, and developers alike. Secondly, this thesis will identify project-based recovery opportunities in the Lower Ninth Ward for local government and community members to build on. The results will include tailored recommendations regarding the processes involved, in order to provide a clear starting point for all stakeholders.

**Methodology**
The research consists of four main parts: a theoretical framework, providing a scientific base for the research build on a literature review; an overview and evaluation of the research methods used; the application of the Delphi method in order to answer the first sub-question; and an in-depth case study in order to answer the second sub-question. After all these elements are completed, this research is concluded by answering the main question and reviewing & evaluating the results.

**Research limitations**
Due to the time restrictions of this research, the Delphi design is limited to two rounds. These two rounds are aimed at analyzing research variables and disclosing the relations between stakeholder perspectives and reality. A third round would have been able to facilitate the process of forming consensus between residents and the government.

**Practical implications**
The end results of this thesis can be used directly by the city of New Orleans and the residents of the Lower Ninth Ward. The project-based recommendations provide a starting point for participatory development. The methodology can also serve as a starting point for any post-disaster redevelopment in the USA and even elsewhere. It is directed at both local government officials and communities. This research can also play a role as a reference for future graduation students.

**Value**
The relevance of this research is both scientific and societal.

**Keywords**
Post-disaster redevelopment; urban area development; urban planning; Katrina; New Orleans; Lower Ninth Ward; participatory development; community; participation; top-down; bottom-up; government; civil society; graduation thesis.
IV. Summary

This thesis researches how a community can start participatory developments in the recovery phase by working towards consensus with the local government in order to overcome being left out of the post-disaster redevelopment process. It consists of a research design, a theoretical framework, a methodological framework, a case study, and a model for initiating participatory development.

The composition of the theoretical framework by doing an extensive literature review has resulted in a clear definition of participatory development and a practical spectrum of participation.
The differences in government and resident perspective have been analyzed and evaluated, resulting in a list of nine variables:

<table>
<thead>
<tr>
<th>Variable</th>
<th>Grounded</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td>35</td>
</tr>
<tr>
<td>Technology &amp; Resources of Residents</td>
<td>26</td>
</tr>
<tr>
<td>Retail</td>
<td>24</td>
</tr>
<tr>
<td>Quality of Neighborhood Organization</td>
<td>23</td>
</tr>
<tr>
<td>Infrastructure</td>
<td>21</td>
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<tr>
<td>Environment</td>
<td>21</td>
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<tr>
<td>Information Accessibility</td>
<td>13</td>
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<tr>
<td>Sustainability</td>
<td>8</td>
</tr>
<tr>
<td>Affordable Housing</td>
<td>7</td>
</tr>
</tbody>
</table>

The panelists have assigned appropriate levels of participation to each of the variables, according to their perspective. The results from this part of the research indicate a moderate agreement among panelists. This means that for six variables, there is a shared perspective on the desired approach to participatory development opportunities. For three variables, the conclusion has to be drawn that there is no shared perspective at this point in time.

The panelists have offered suggestions for project-based recovery opportunities. These suggestions have been evaluated using the spectrum of participation, and are explained regarding their implications for tangible projects.

The methodological design used in this thesis is used to construct a model capable of enabling residents & local government to form a mutual understanding about planning & implementing post-disaster redevelopments in the recovery phase, identifying essential local recovery projects accordingly. The methods used in and designed for this case study have resulted in a model that enables a community to initiate participatory developments in the recovery phase, even when the residents have been excluded from the post-disaster redevelopment process so far.
1 Introduction
1.1 Introduction

In 2005, on August 29th, Hurricane Katrina made landfall near New Orleans. Strong winds ravaged the city and levees on the city's canals were breached. Most parts of the city are below sea level and over 80% of the city was flooded. While many residents and businesses returned to the task of rebuilding the city, the effects of the hurricane on the economy and demographics of the city are expected to be dramatic and long term. It is sometimes referred to as "the most costliest engineering mistake in American history" (Shearer, 2005).

The magnitude of the displacement that resulted from the flooding was immense: the city's entire population of 455,000 was forced to leave the city and resettle, which some did temporarily and others permanently. Hurricane Katrina damaged 71% of New Orleans' occupied housing units, making this event the largest residential disaster in US history (Finch et al., 2010). Today, the population has climbed back up to approximately 350,000 inhabitants (U.S. Census Bureau, 2012). This is still only 70% of the original population. Figure 1.1 shows the population fluctuations of New Orleans; the mass evacuation due to Katrina in the summer of 2005 is clearly visible.

With such extensive damage, rebuilding any city would be difficult. The situation was more complex in New Orleans, however, because of its trenchant pre-Hurricane Katrina problems. Problems inflicted by the flooding are added to the problems the city was already struggling with. New Orleans had been losing population since 1960. High poverty, slow economic growth, and minimal racial progress are the hallmarks of the New Orleans region (Rusk, 2005). Although the flooding impacted 77 percent of the city's population, affecting people and neighborhoods across socio-demographic lines, Hurricane Katrina disproportionately affected African Americans, renters, people with low incomes, and the elderly, exacerbating many pre-Hurricane Katrina inequities (Nelson, 2007). Previous studies show disparities in the effects of Katrina by race and socioeconomic status at multiple stages of the disaster and the redevelopment process (Rusk, 2005; Groen & Polivka, 2008; Elliott & Pais, 2006; Paxson & Rouse, 2008; Vu et al., 2009; Fussell et al., 2009; Stringfield, 2009). The evacuation of New Orleans aggravated existing inequalities in the region, allowing more advantaged residents to return while leaving less advantaged residents dispersed across numerous destinations (Sastry, 2009). The people who remained displaced are generally the poor and African-American. They tended to live in areas that experienced greater flooding and hence suffered more severe housing damage which, in turn, led to their delayed return to the city (Fussell et al., 2009). Also, most of the long-term displaced persons used to rent instead of owning a house, which leaves them with little influence on the redevelopment of their former residences.

The disaster did not only have economic, spatial and social consequences, but also weight in heavily on the political issues. With the flooding added to these persistent problems, the population has had a moral breakdown. People lost trust in state officials after evacuation incidents that caused several deaths (e.g. Superdome, Crescent City Connection). Civil disturbances, including looting and snipers firing at state officials, increased the gap between the government and the community. The fact that it was the failure of the levees that caused the

Fig. 1.1: Annual Estimates of Population
(U.S. Census Bureau, 2012)
flooding contributed to the loss in faith. Because it took so long to clean up the streets, the water got infected with diseases like E. coli which led to additional deaths.

The vision of the City of New Orleans is that the post-disaster redevelopment is not just a chance to rebuild the city, but to tackle these persistent issues and improve the city compared to the post-Katrina situation: “New Orleans’ recovery from the nation’s greatest urban disaster (...) is the opportunity to lay the foundation for new opportunities and enhanced livability, making New Orleans a leading world city and a sustainable community; building an exciting future for all its residents” (CPC, 2010). This specific point extracted from the redevelopment vision of the City Planning Commission is of particular interest to this research, because it highlights exactly what is still missing in one of the city’s most affected communities - the Lower Ninth Ward: new opportunities, enhanced livability, and an exciting future.

Turning the vision of the CPC into an actual redevelopment plan turned out to be extremely difficult. More than nine different plans have come and gone since 2005. Sometimes plans were overlapping. Figure 1.2 shows a timeline of all major plans that have actually been implemented to a certain degree.

In 2009, UN-Habitat published a report concerning the planning process in New Orleans. According to this report, every plan so far had failed to take into account the real issues that are threatening the city (Farha, 2009). These issues include environmental, political, social, economic and demographical aspects. It was their strong advice to take on a different approach to the planning process:

“New Orleans residents want to live in safe, productive communities, and they understand first-hand the challenges and work it will take to get there. Residents should therefore be regarded as essential partners working alongside the government in rebuilding the city. Unfortunately, too often in re-development projects the government treats the private sector as its only partner and discounts the vital role residents should have in decision-making. Efforts should be made to ensure that residents are engaged at the start of any redevelopment planning and continue to be actively engaged throughout the process.”

After the recommendations made by UN-HABITAT, the City of New Orleans and the City Planning Commission started to analyze all previous plans and took useful elements to construct the Master Plan New Orleans 2030. The CPC is proud of their inclusion of citizens in the process of plan- and decision-making, but local communities have already spoken out against the way this
master plan was shaped; the level of participation was still too low in their opinion (City of New Orleans, 2010). Though some public hearings were held in the drafting of the plan, those whose housing was most affected by Katrina were not given adequate opportunity to be heard (Farha, 2009).

In order to support neighborhoods in rebuilding and reshaping their community, every opportunity to do so should be seized. It would be a major step in the right direction if government and residents can work together towards a consensus on how participatory development should be set up in practice, because conflicting perspectives can lead to missed opportunities for both sides. This has not yet happened in the recovery process of the Lower Ninth Ward. It has been eight years since New Orleans was hit by Katrina. But the number of years elapsed does not reflect on the relevance of the subject. On the contrary, the importance of research has only become more apparent.
1.2 Problem Statement

New Orleans is a city of extremes. Certain neighborhoods have managed to make a near full recovery, while others still look like a disaster zone. Instead of the envisioned city-wide recovery, disparities are growing. Recovery seems almost impossible in some areas (Rich, 2012). Some communities, like the Broadmoor neighborhood, have found ways to enter the redevelopment process and actively influence planning and decision-making. Other communities, like the Lower Ninth Ward, remain excluded and are left out of the process. The results of these differences are devastating.

While everyone involved in the process agrees on paper that engaging residents is necessary for a successful recovery, it is apparent that reality does not always show such an idealistic mutual understanding. Looking at recent images, reading articles, and talking to residents & City officials about the current state of New Orleans, it becomes clear that the intentions of the CPC to engage residents in the redevelopment process somehow do not meet the expectations of residents.

People dispersed still want to return, but find themselves unable to. People still want to have a voice in the redevelopment of their neighborhoods, but find themselves unable to participate in the process (Bouler, 2012). The City states that they let residents participate in the process, but both parties seem to have a different understanding of the concept of participation.

Even in scientific literature, there is no distinct mutual understanding of the foundational concepts of participatory development (see also section 2.2). The lack of consistency in a proliferation of papers, articles, and policy documents regarding participation is obstructing the basis of the discourse and leading to practices built on misconstrued theory.

Over the years, UN-Habitat and many other organizations and experts have indicated that the prevailing redevelopment processes in New Orleans proved to be inefficient (and in some neighborhoods ineffective) and that participation of the civil society is paramount in order to create a process that can lead to a successful redevelopment (Farha, 2009; Finch, 2010; GNOCDC, 2012; Groen, 2010; Nelson, 2007; Olshansky, 2006). There is no current process that enables government and residents to work together. The current redevelopment processes still allow communities to be excluded, especially when they lack means to start a recovery process on their own. The lagging recovery in some neighborhoods, like the Lower Ninth Ward, is caused by many
interrelated issues, both socio-economic and physical, but it is the troubled relationship between the community and the local government, leading to difficulties of incorporating the residents in the process of redevelopment, that needs to be addressed first in order to move towards resolving any other obstacles. The divergent perspectives of the stakeholders involved are not the only thing obstructing the recovery process; the issue is deep-rooted due to various animosities infecting the dialogue.

"We finally cleaned up public housing in New Orleans. We couldn’t do it. But God did.”

- Congressman Richard Baker

[City Hall] "... says to black New Orleanians in these flooded neighborhoods that the quality of your life does not matter."

- LNW resident, Mrs. Gueringer

When residents and the local government foster a us-versus-them mentality, participation will be hard to initiate. Any conversation about redevelopment gets clouded by lingering reproaches and different expectations regarding the levels of engagement on both sides, fueled by a bilateral misconstrued understanding of what participation entails. The blame and resentment obstruct the discussions from focusing on possible mutual interests. The emphasis is placed on the differences in perspective instead of common interests.

Figure 1.5 summarizes the problems at hand.

![Figure 1.5: Problem Statement Summary.](image)

These three problems are all related and are viewed as an overall lack of consensus. Without resolving these issues, no steps towards a consensus between the government and the residents can be taken, and ultimately no improvement in the recovery process of the Lower Ninth Ward will be made.
## 1.3 Research Objectives

The objectives of this research aim at providing solutions for the issues as mentioned in the problem statement.

**Mutual Understanding**

It is not only necessary for the case study to sort out the fuzzy discourse surrounding the conception of participatory development, it is also relevant to the scientific community. The need to clarify the misconstrued vocabulary surrounding participation will help every researcher who touches these topics. The objective is to analyse, evaluate and construe the theory behind the concept of participation in order to provide a clear theoretical basis for the case study and support a mutual understanding among all stakeholders.

<table>
<thead>
<tr>
<th>Problem:</th>
<th>Objective:</th>
</tr>
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<tbody>
<tr>
<td>No mutual understanding about what participation is.</td>
<td>To provide a clear concept of participation.</td>
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</table>

**Model for Initiating Participation in the Recovery Phase**

The purpose of this research is to design a participatory development model capable of enabling residents & local government to form a mutual understanding about planning & implementing post-disaster redevelopments in the recovery phase, identifying essential local recovery projects accordingly. This method will tackle known issues in existing models for participation in post-disaster redevelopment.

When reconstructing a destroyed neighborhood, it is not just about physical rebuilding. Rebuilding the social fabric of a community, and mending the broken relationships between residents and the city, are equally important. This means that planning and implementing the recovery of a community is not only a process, it is a product in itself. The objective is to review and present the method - as used in and designed for the effectuation of the case study - as a generic model for future planning, policy-making, and implementation in post-disaster redevelopment, suitable not only for the context of the United States of America, but for global practice as well.

This is done by assessing the differences in expectations regarding recovery and participatory development in the case study neighborhood (Lower Ninth Ward, New Orleans), and comparing similarities in these stakeholder perspectives. By combining institutional and local knowledge in a project-based manner, generalizations and misunderstandings can be avoided. The data collected during the case study are analyzed, processed, and reviewed by experts so conclusions regarding the expected feasibility of the implementation of the model can be drawn and recommendations for the case study and the generic use of the model can be made.

<table>
<thead>
<tr>
<th>Problem:</th>
<th>Objective:</th>
</tr>
</thead>
<tbody>
<tr>
<td>No current process that enables government and residents to start working together in the recovery phase.</td>
<td>To provide a model that allows excluded communities to enter the recovery process by building on mutual understanding and interests among local government and residents.</td>
</tr>
</tbody>
</table>
**Mutual Interests**

This thesis will identify project-based recovery opportunities in the Lower Ninth Ward for local government and community members to build on. The results will include tailored recommendations regarding the processes involved, in order to provide a clear starting point for all stakeholders. By stepping away from the generalized discourse, the focus can be placed on tangible mutual interests on a neighborhood scale and practical solutions regarding various topics.

**Problem:**
No mutual interests identified.

**Objective:**
Identification of project-based mutual interests, including specified recommendations.

**Consensus**

All three goals together are the first step in working towards a consensus. This thesis aims at providing the knowledge, tools and guidelines to successfully accomplish that first step. Whether a consensus will be reached, is up to the stakeholders and their commitment to the process.

According to Arietta and Wallace (2000), consensus is the intended outcome of a participatory process. After listening to all perspectives, participants develop a proposal that honors the wisdom of the group. Consensus is a cooperative process in which all group members develop and agree to support a decision in the best interest of the whole. In consensus, the input of every participant is carefully considered and there is a good faith effort to address all legitimate concerns (Dressler, 2006). Ideally, a consensus decision reflects mutual understanding, agreement to support a decision, and commitment to take action steps for the benefit of the group.

This thesis does not offer a complete common vision, nor does it claim to have achieved consensus. This is part of the next step to be taken after following the guidelines as provided by this research. Post-disaster redevelopment is a complex and challenging process, with multiple phases and various stakeholders. The objective of this thesis is to offer the means to kickstart a recovery process for communities that have found themselves unable to join the city in its redevelopment.
1.4 Research Question
In order to respond to the problem as stated in section 1.2 and in order to fulfill the objectives of this research, a main research question is formulated. To answer this question and draw conclusions, three sub-questions are answered first. The main research question and sub-questions are as follows:

MAIN RESEARCH QUESTION
How can a community start participatory developments in the recovery phase by working towards consensus with the local government in order to overcome being left out of the post-disaster redevelopment process?

CASE STUDY
Lower Ninth Ward, New Orleans.

SUB-QUESTIONS
1) What are the perspectives of the city government and the local community on recovery and participatory development in the Lower Ninth Ward?
2) How can the differences or similarities in the perspectives of the city government and the local community identify opportunities for local recovery projects?
3) In what ways can the methods used in the case study contribute to the prevailing models of participation in post-disaster redevelopment?

1.5 Case Study: The Lower Ninth Ward, New Orleans
The selection of the case is based upon the second rationale by Yin (2003); the Lower Ninth Ward is an extreme case. The typical or average case is often not the richest in information. Extreme cases have the potential to reveal more information because they activate more actors and more basic mechanisms in the situation (Flyvbjerg, 2006).
1.6 Research Design

A general overview of the research design as used in this thesis is visualized in figure 1.5. Chapter 3 provides an in-depth explanation of the research design.

H2

**Theoretical Framework**

To provide a clear concept of participation.

H3

**Methodology**

H4

**Case Study**

H5

**What are the perspectives of the city government and the local community on recovery and participatory development in the Lower Ninth Ward?**

To provide a model that allows excluded communities to enter the recovery process by building on mutual understanding and interests among local government and residents.

H6

In what ways can the methods used in the case study contribute to the prevailing models of participation in post-disaster redevelopment?

H7

How can the differences or similarities in the perspectives of the city government and the local community identify opportunities for local recovery projects?

H8

How can a community start participatory developments in the recovery phase by working towards consensus with the local government in order to overcome being left out of the post-disaster redevelopment process?

**Conclusion**
1.7 Conclusion
This chapter gives an introduction to the research presented in this thesis by analyzing the problems at hand and formulating objectives and research questions.

Writing a thesis including a case study is not often a linear affair, but rather an iterative process. The research design has come to be through rigorous efforts of revising and adjusting. Hence, the execution of the field work and writing of the thesis both had iterative aspects as well. However, for the sake of legibility, the research is presented in an chronological manner as shown in the overview of the research design.
2 Research Framework
2.1 Introduction

In this chapter we explore several theories and concepts related to the research topics.

The first section provides an overview of the main contextual concepts of this research. The terms 'disaster' and 'post-disaster redevelopment' are defined and explained.

The second section offers theories and concepts focusing on participatory development. The most striking issue, as derived from the problem statement, is the lack of involvement of residents in the redevelopment process. In order to support the case study through theory-building and the establishing of the research framework, this section will define and explain what participatory development is. The history and the position of participatory development within urban area development are analyzed. The most important concepts related to participatory development are presented and the position and application of participatory development in post-disaster redevelopment is explained.

The theoretical framework fulfills the objective of providing clarity on the concept of participation and offers solid ground for the methodology and execution of the case study and field work. It offers the means to answer the research questions.
2.2 Post-Disaster Redevelopment

The aim of this section is to provide and analysis and evaluation of the theory on post-disaster redevelopment by means of a literature review. In order to offer a clear conception, it is essential to first understand the nature of urban area development, of which post-disaster redevelopment is a specific form. Subsequently, this section will analyze the characteristics of post-disaster redevelopment and offer a comprehensive overview of its

2.2.1. Urban Area Development

Post-disaster redevelopment is a specific form of urban area development. It stands out compared to regular urban area developments due to various significant differences. In order to understand the specific challenges and difficulties involved with post-disaster redevelopment, it is necessary to analyze the characteristics of urban area development in general.

Urban development manifests itself through spatial changes in various areas, which act in mutual correlation to form the urban region and shape its functioning. Urban area development is aimed at developing these particular areas (Franzen, 2011).

Urban area development is not defined in a commonly accepted way (Heurkens, 2012). Daamen (2010) states that “urban area development became known as the practical ‘translation’ or ‘instrument’ of development planning, reflecting a joint public-private effort to link spatial policies more closely to project implementation.” According to Franzen et al. (2011), urban area development may be described as the sum of a large number of complex processes performed by many individual actors and organisations with their own interests and claims. Urban area development involves active intervention by local authorities and other organisations. The process is not only concerned with spatial development; it must take into account economic, social, and various other developments.

The process of urban area development is cyclic. It is an ongoing process in which various phases can be distinguished. Each phase has its own challenges and objectives. The different phases are depicted in figure 2.1.

![Figure 2.1: Phases of Urban Area Development (Verlaat & Wigmans, 2011)](image-url)
The process of urban area development can be applied in numerous situations, like the redevelopment of a historic city center or the transformation of an industrial area. The characteristics of the process can adapt to different situations. Post-disaster redevelopment is a particular form of urban area development; the context of a disaster imposes unique and significant changes to the process.

2.2.2. Management in Urban Area Development

In urban area development, the actors are not always in positions of equality. Most urban area development projects have their own forms of organization because they are such a long-term process (Franzen, 2011). In order to cope with these various managerial aspects within urban area development, there are three main forms of management within this field: organization management, project management, and process management.

Project management is characterized by its temporary nature and the need to build up a new team, with all the associated rules.

Process management focuses on complex decision-making. It can be seen as a response both to the formation of networks and dynamics in society and to the widening of social ambitions. According to Franzen (2011), process management has no clear predetermined or specific aim: its aims can change or be changed.
2.2.3. **Post-Disaster Redevelopment**

Post-disaster redevelopment is a specific form of urban area development. The conception of the term 'disaster' as used in this research is:

> "A disaster is a serious disruption of the functioning of society, causing widespread human, material or environmental losses which exceed the ability of affected society to cope using only its own resources. Disasters are often classified according to their cause (natural or man-made)."

(UN-DHA, 1992)

When a disaster occurs, a series of decisions must be made almost immediately. Despite the urgency with which these decisions are made, they have long-term impacts, changing the lives of those affected by the disaster for years to come (Jha, 2010).

As every urban area development, post-disaster redevelopment is a cyclic process with various phases (Rotimi, 2010). This repetitive nature applies to both urban area development and post-disaster redevelopment, because the unfortunate reality is that after today's disaster, there will eventually be a next one. Every phase has its own characteristics and activities.

The cycle of post-disaster redevelopment is shown in figure 2.2.

![Figure 2.2: Cycle of Post-Disaster Redevelopment (Pelham & Halstead, 2010)](image-url)
After the activation and implementation of the redevelopment, the plan needs to be updated in order to prepare for future events, thus completing the cycle and returning to its starting point.

Figures 2.3 and 2.4 show a visual representation of the first three phases of the generic post-disaster redevelopment process. Each succeeding phase takes approximately ten times longer than the preceding phase. The following paragraphs describe the nature of these three phases: response (plan activation), recovery (short-term recovery transition) and reconstruction (long-term redevelopment implementation). These figures show a partial extract of the redevelopment cycle and are therefore depicted in a linear manner. Keep in mind that these phases are still part of a more extensive cycle.

![Figure 2.3: Sequence of Post-Disaster Activities (Vale, 2005).](image)

![Figure 2.4: Sequence Adaption following The World Bank Definitions](image)

These three phases of post-disaster redevelopment explain what types of activities are present in different time frames after a disaster has occurred.
Response: Plan Activation
Response is considered the first phase of post-disaster activities. The response phase corresponds to the emergency or crises period when normal, social and economic activities either cease or are drastically affected (Rotimi, 2010). The response phase will end when no more search and rescue operations are executed and all safety evacuations are completed. According to Rotimi, it is clear that pre-planning activities are central to disaster response. This will determine how long the initial response will take before the transition to the disaster recovery stage.

Recovery: Short-Term Transition
Recovery is a term that has been used interchangeably with reconstruction, restoration, rehabilitation and restitution (Quarantelli, 2000). Sullivan (2003) explains that recovery activities come to an end when an assisted community reaches levels of functioning where it can sustain itself without further external interventions. According to the Handbook for Reconstructing after Natural Disasters (2010) the number one priority in post-disaster recovery is to help reanimate communities and empower people to rebuild their housing, their lives, and their livelihoods. Furthermore, community members should be partners in policy making and leaders of local implementation. Every post-disaster recovery program should aim at returning every facet of an affected community and the elements of its environment, as early as possible to original levels (status quo); or to a time accelerated and performance improved situation (Rotimi, 2010). These conditions are depicted in figure 2.5 as case A and B with the graphs equating to or above initial performance levels respectively (Miles, 2006). It is quite possible also (in the worst case scenario) that an affected community, group or individuals may never recover from the event to the extent that final performance levels generally fall below pre-disaster states (as depicted in case C). It is becoming apparent that the Lower Ninth Ward might turn out to be a case C neighborhood. According to Rusk, “for many [evacuees], the best course would be not to return to their devastated communities. Many of the Katrina’s evacuees had little prospects of bettering their lives before the hurricane; their post-hurricane prospects are worse... In short, it may be realistic to project that one-third to one-half of Katrina’s evacuees will never return home, but seek better futures elsewhere.”

Reconstruction: Long-Term Implementation
Rebuilding the damaged and destroyed physical environment will already start in the recovery phase. Some areas will recover and reconstruct faster than others, which also influences the pace of recovery of social structures. Due to this and several other factors, the recovery & reconstruction phase often show a high level of overlap.
Post-disaster housing reconstruction can be undertaken through different approaches, which vary principally in terms of a household’s degree of control over the reconstruction process. The choice of the best reconstruction approach—or approaches—to be employed is context-specific and should take into consideration reconstruction costs; improvement in housing and community safety; restoration of livelihoods; political milieu; cultural context; and people’s own goals for well-being, empowerment, and capacity. Consultation with the community and evaluation of requirements and capacities is critical before deciding on any reconstruction approach (Jha, 2010).
2.2.4. **Communities in Post-Disaster Redevelopment**

According to the Handbook for Reconstructing after Natural Disasters (2010) the number one priority in post-disaster redevelopment is to help reanimate communities and empower people to rebuild their housing, their lives, and their livelihoods. Furthermore, community members should be partners in policy making and leaders of local implementation. This section explains how the reviewed literature perceives the inclusion of communities in the process.

According to the World Bank, participation allows stakeholders to collaboratively carry out a number of activities in the post-disaster redevelopment cycle, including the following:

**Analyzing:** Identifying the strengths and weaknesses of existing policies and service and support systems.

**Setting objectives:** Deciding and articulating what is needed.

**Creating strategy:** Deciding, in pragmatic terms, directions, priorities, and institutional responsibilities.

**Formulating tactics:** Developing or overseeing the development of project policies, specifications, blueprints, budgets, and technologies needed to move from the present to the future.

**Monitoring:** Conducting social assessments or other forms of monitoring of project expenditures and outputs.

Other agencies have more expansive views of participation. Figure 2.6 shows the level of control that is inherent to different generalized types of participation in post-disaster redevelopment, according to other sources.

![Fig. 2.6: Participation Opportunities in Post-Disaster Redevelopment (Jha, 2010)](image)

Even though figure 2.6 shows that there are sources that offer a broader view on community participation to support local governments in their redevelopment efforts, no specific tools or models yet explain how or when these activities should be implemented. Figure 2.7 progresses on the acknowledgment of the importance of community participation and offers a concise list of participation opportunities categorized according to different phase-related activities.
The above figure illustrates examples of activities that could be carried out by residents in post-disaster redevelopment. However, it depends on the local context and specific circumstances whether or not these activities are appropriate or desirable.

Since communities know most about their own local environment, culture, vulnerabilities, requirements, and building techniques, post-disaster redevelopment should be planned by them or, at a minimum, under their direction. Communication with the community is a critical element of a successful redevelopment process. Conventionally trained planners may need to adjust their thinking in order to be successful.

2.2.5. Conclusions

Post-disaster redevelopment is a specific form of urban area development. It has its own challenges, objectives, and characteristics. Every phase of the post-disaster redevelopment cycle comes with its own characteristics and activities.

While there are many sources that extensively explain the nature of the post-disaster redevelopment cycle and unanimously underline the importance of at least some form of community participation, there are no detailed models of how communities can be included in practice. Part of this issue is that there is no clear conception of what participation is. The next section sets out to analyse participatory development in order to get a better understanding of its possibilities and functionality in post-disaster redevelopment.
2.3 Participatory Development

In New Orleans, citizens have found themselves at the bottom of the hierarchy of the redevelopment process, making the achievement of an equitable recovery a distant, seemingly unattainable goal (Duval-Diop, 2010). According to various scholars and practitioners (Booher, 2008; Glover Blackwell & Treuhaft, 2008; Hanna, 2000; Healey, 1997; Jha, 2010; Mathie, 2003; The World Bank, 1996), communities which encounter issues like poverty, inequality, and social exclusion, benefit most from a bottom-up approach as compared to top-down development projects. However, how this bottom-up approach should be shaped is still in dispute. Participation, engagement, and community-based are just a few of the buzz-words which are dominating a new wave of interest in bottom-up development. The general idea is to involve citizens in developments and decision-making which would affect their daily lives. Viewed as a paradigm, participatory development has its own vocabulary and language. It may be used to describe a broad range of activities, functions and relationships in society. The broadening of the concept and its growing popularity - with an increasing number of international and indigenous organizations and Third World governments subscribing to the participatory discourse - have given it a measure of ambiguity and lack of consistency in the very use of the term (James, 2003). Sometimes the concepts overlap, other times a single concept can be subject to different definitions. In order to introduce the variety of the participatory development vocabulary and set out the key concepts of this part of the framework, figure 2.1 visualizes the relations between various terms.

Participatory Development

<table>
<thead>
<tr>
<th>Community Participation</th>
<th>Community Engagement</th>
</tr>
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<tbody>
<tr>
<td>Community-Based Development</td>
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</tr>
</tbody>
</table>

**Top-Down**

- Needs-Driven Development
- Community-Driven Development
- Demand-Driven Development

**Bottom-up**

- Asset-Based Development
- Asset-Based Community Development
- Capacity Focus

Empowerment | Social Capital | Civil Society | Social Exclusion

"Participation is a process through which stakeholders influence and share control over development initiatives and the decisions and resources which affect them" (The World Bank, 1996). As this definition implies, the World Bank upholds the participation of not the broad masses but only of the relevant stakeholders who by their actions can influence the outcome of projects and programs (James, 2003). This means that it is not necessary to involve the entire population in developments which only affect a certain community. By this definition it can already be deducted that ‘participatory development’, ‘community participation’, ‘community engagement’, and ‘community-based development’ all denote the same. This research prefers the term ‘participatory development’ because ‘community participation’ and ‘community engagement’ are both common terms outside the field of urban area development (e.g. in the
fields of medicine and tourism), and 'community-based development' is mainly associated with specific needs-driven approaches.

2.3.1. History

Almost all concepts used in today's revival of the participatory development paradigm have actually been around for a long time.

The founding ideas of participatory development date back to the nineteenth century and are generally based on Marxism. Robert Owen (1771 - 1858) was one of the first to translate socialism philosophy to bottom-up developments. He was a successful businessman in the cotton trade, who believed in providing a healthy living environment for his employees and their families. He also promoted education among his workers and their children. Owen had the idea of forming "villages of co-operation" where employees would drag themselves out of poverty by growing their own food, making their own clothes and ultimately becoming self-governing (Royle, 1998). He tried to form such a community in New Harmony, Indiana, but it fell apart within two years, mainly due to the fact that the approach of Owen was highly theoretical.

Dr. William King (1786 - 1865) took Owen’s ideas and made them more workable and practical. King believed in starting small, and realized that the working classes would need to set up co-operatives for themselves, so he saw his role as one of instruction (Mercer, 1922). He founded a monthly periodical called "The Co-operator", the first edition of which appeared on May 1, 1828. This journal offered a mixture of co-operative philosophy and practical advice about running a shop using co-operative principles. King advised people not to cut themselves off from society but rather to form a society within a society, and to start with a shop because "We must go to a shop every day to buy food and necessaries - why then should we not go to our own shop?" (Mercer, 1922).

The works of Paulo Freire (1921 - 1997) and Gandhi (1869 – 1948) are based on the ideology of co-operation and aim at village self-reliance, small-scale development, and uniting "the oppressed" to find a way to improve their own destinies (Freire, 1970; Gandhi, 1962). These ideas led to the first wave of participatory development in the 1950s, which by 1960 had spread to more than 60 countries in Africa, Asia, and Latin America, largely through efforts of the U.S. Agency for International Development (Mansuri & Rao, 2004). Most of these programs eventually collapsed after funding dried up. During this period of global interest in participatory development, various scholars immersed themselves in the theoretical side of participation. Participation was seen within a paradigm of ‘conflict as the essential for social change’ (Richardson, 2005). The aim was 'power to the people', within the belief that the populous could manage without the decisions makers at the top. It is also within this way of thinking that one of the first and probably most widely cited models was developed (Straub, 2012); Arnstein’s ladder of citizen participation from 1969 (Collins, 2006). In her model, shown in figure 2.3, Arnstein distinguishes 8 levels of citizen influence which she categorizes into 3 discrete groups:
a) Non Participation:
The first group and lowest level of involvement is what Arnstein labels as non-participation. In this group the ambition is not to have citizens participate but rather to educate them or ‘cure’ them. In this case the proposed plan is seen as being the best and the only reason for involving citizens is to secure support.

b) Degrees of Tokenism:
In this group a true involvement of citizens is given, however Arnstein claims that at this level the involvement is only functioning as a token. Citizens still don’t have any true power in this level.

c) Degrees of Power:
In the highest group true empowerment of citizens is realized.

Many economist and policy theorists then started criticizing participatory development (Demsetz, 1970; Hardin, 1982; Olson, 1973). Due to numerous publications on the concerns of this approach in the seventies, a great deal of pessimism in all kinds of development institutions arose about the feasibility of participatory development. This turned out to be a stimulus for top-down, large-scaled development programs initiated by the government (Mansuri & Rao, 2004).

Starting in the early 1980s, scholars and practitioners became alarmed by the relative failure of these neoliberal projects (Kilby, 2012). Social scientists argue that these practices are both disempowering and ineffective (Escobar, 1995; Scott, 1998). Chambers (1983) and Sen (1985) are two of the most influential proponents of this renewed support for participatory development in the last two decades of the 20th century. They instigated the shift of focus from material well-being to a broad-based “capability” approach, and argued that empowering the poor by allowing them to have control over decision-making should be included in developments that affect them. This period is referred to as the era of ‘instrumental rationalism’ where participation was seen as a tool within an array of scientific and economic instruments (Straub, 2012). The theoretical belief was that decisions were made in value-free objectivity, in which citizen participation would be applied in calculated doses as suitable for the project. One of the models which fit into this era, and also represents one of the first broadly cited alternatives to Arnstein, was the model of Connor (1988) as shown in figure 2.3. But soon after the ideas of instrumental rationalism had been found, a new era of theories developed which put the decision-making process and interaction of participants and authorities back into focus. A model by Potapchuk (1991),
presented only three years after Connor's (1988), already embraced the consensus paradigm. Potapchuk specifically criticizes the limitation of both Arnstein’s and Connor's proposal to entail the potential of collaboration. Both previous models are based on opposition between citizens and institutions.

Even though the evolving theory led to a better understanding of the possibilities of participatory development, most of the practical examples of such developments are limited to neighborhoods where social, economic and physical decline have spiraled out of control of public & private parties, and to the field of post-disaster redevelopment (natural & man-made) in third world countries. Participatory development appears to be perceived as a method of final resort. But when the top-down design practices that have successfully been dominating the urban redevelopment arena for the nineties & the last decade are starting to falter (Robles-Duran, 2011), participatory development is becoming more and more interesting for area developments in common practices. Complaints about poor performances of “big developments” and their often significant environmental and poverty impact have re-awakened the interest in local management of resources and decision-making (Mansuri & Rao, 2004). Alongside this latest renewal of interest in participatory development, participation theory is changing again. Richardson and Connelly (2005) argue that both the rational instrumentalist and ideal consensus schools of the eighties & nineties only provide an incomplete representation of reality. These schools tend to see participation in a technocratic or idealist perspective, as either an emotionless tool or natural force-free collaboration (Straub, 2012). But in reality, the relationship between different parties is often unequal, which is signified in practice and research by employing the term power. For example, project developers or aldermen are widely regarded to have more power over the outcome of a project than a single resident, simply because they have the resources to influence decisions and actions of others more strongly and directly (Daamen, 2010). In the recent school of thought regarding participatory development, power is not seen as oppressive but as a constructive and natural element of collaboration. Participation in awareness of interests and power will result in decisions more representative of the external reality, than those aiming for constant ideal consensus in an interest and power free bubble (Healey, 1997; Richardson, 2005).

2.3.2. Participatory Development in the Constellation of Urban Area Development

It is hard to apply theoretical models of participatory development to real-life projects when the scope of participation concepts is seen as an independent paradigm. The component parts of a system (in this case, the system of urban area development) can be best understood in the context of relationships with each other and with other systems, rather than in isolation (Heurkens, 2012). Participatory development is part of a holistic system of interactions between market, government, and civil society. Thus when circumstances favor the position of market actors in the arena of area developments (e.g. when a seller's market occurs), the incentive for market actors to put time, money, and effort in participatory developments will be much lower than when circumstances impair market actors (e.g. during a real estate depression). These kinds of shifts in power and interest can be seen between civil society and government as well, and might explain the repetitive rise and decrease of interest in participatory development throughout the years.

Fig. 2.4: UAD Arena.
(Prins, 2008)
An important difference between previous waves of interest in participatory development and the recently renewed efforts is the immense increase of information accessibility & communication possibilities on the part of the civil society. People are often well-informed regarding planning policies, are better organized, and have become comfortable with taking legal steps in order to increase their power in public- & market-initiated development projects. So the incentives for government and market actors to include civil society in development projects are no longer mainly coming from external circumstances; civil society as an actor is gaining power over the nature of relationships in the urban area development arena. And through the internet, through social media, smartphones, and so on, civil society is sharing information about participatory development, therefore accumulating knowledge and even influencing theory & practice (which have traditionally been exclusive to professionals like scholars and government officials).

The current situation is as follows: multiple actors are simultaneously re-inventing, improving, and applying the same concepts. This is bound to lead to mutual misunderstandings. Where a municipality might think that inviting citizens to express their ideas regarding a development project is an adequate implementation of, let's say, community participation; the respective community might not agree with the municipal conception of 'community participation' as they might have a completely different understanding of this term.

Unfortunately, a side effect of the increased activity of civil society is the emergence of different definitions by concept and multiple concepts with the same definition, which makes it hard to get a proper understanding of the bigger picture. Fortunately, this also indicates that the way we use the vocabulary of participatory development today is based on biased points of view and is now in the process of finding universal definitions.

This framework does not claim to have the perfect, unbiased definitions of the concepts within participatory development. But it does try to provide definitions based on both public and civic perspectives in order to avoid that conflicts between these actors influence the theoretical base by which this research sets out to investigate the collaborative nature of the participatory development process.

2.3.3. Power & Interest in the Arena of Area Development

Following the most recent theory on participatory development as set out in section 2.2.1, different forms of partnerships in the arena of area development can be distinguished based on variations in power & interest amongst stakeholders.

Relationships between actors are almost never an ambiguous affair. Between the black and white extremes, there is a vast grey spectrum of partnership possibilities. The level of participation in participatory area development can vary from simple information sharing, to social, economic, and political empowerment of community groups (Tanaka, 2006). In order to understand such a spectrum of collaboration for participatory development, figure 1.6 shows the two other spectra: the range of possible partnerships between government & market stakeholders, and the partnerships between market & civil society regarding the production of residential real estate.
Civil Society & Market
The spectrum of residential development in figure 1.6 shows the change of influence both parties have on the production of residential property. Leaning towards the market in the arena, influence over residential development decreases for civil society. The colored section contains different forms of partnerships.

PrC Private Commissioning
CPC Collective Private Commissioning
PaC Participative Commissioning
MC Mass Customization
SP Serial Production

On the far left on the civil-market spectrum, residents control the design and production process through private commissioning. The far right represents the other end of the spectrum, where the market controls the development without partnering with civil society at any stage of decision-making or production.

Government & Market
A similar spectrum can be constructed for the relationships between government and market. The eight different forms of organization are placed according to the levels of power & interest of both stakeholders (Heurkens, 2012). This spectrum includes various forms of Public-Private Partnership (PPP) constructions, where the interactions between government and market actors are based on different models of collaboration and cooperation.

1 Passive Government
2 Government Adoption of Market Regulation
3 Market Self-regulation in Government Framework
4 Joint-Venture
5 Market Contracting
6 Consultation
7 Lobbying by Market Actors
8 Passive Market

Fig. 1.6: UAD Arena & Co-Creation Continuum
(In reference to Prins, 2008; and Straub, 2012.)

Fig. 1.7: UAD Arena & Government-Market Spectrum
(Based on Bennet et al., 2000; Börzel & Risse, 2002; Heurkens, 2012)
Government and Civil Society: Participatory Area Development

There are several variations of a participation continuum or spectrum circulating. Most of them can be traced back to the Public Participation Spectrum (also known as the Spectrum of Community Engagement) as published by the International Association for Public Participation (IAP2, 2007), but elements of this spectrum can be found in older sources (Wilcox, 1994) and the origins can be found in the models of Arnstein and Connor, and the works of writers like Healey. This research will use the spectrum by the IAP2 as a template.

<table>
<thead>
<tr>
<th>INFORM</th>
<th>CONSULT</th>
<th>INVOLVE</th>
<th>COLLABORATE</th>
<th>EMPOWER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public Participation Goal:</td>
<td>Public Participation Goal:</td>
<td>Public Participation Goal:</td>
<td>Public Participation Goal:</td>
<td>Public Participation Goal:</td>
</tr>
<tr>
<td>To provide the public with balanced and objective information to assist them in understanding the problems, alternatives, opportunities and/or solutions.</td>
<td>To obtain public feedback on analysis, alternatives and/or decisions.</td>
<td>To work directly with the public throughout the process to ensure that public concerns and aspirations are consistently understood and considered.</td>
<td>To partner with the public in each aspect of the decision including the development of alternatives and the identification of the preferred solution.</td>
<td>To place final decision-making in the hands of the public.</td>
</tr>
</tbody>
</table>

Fig. 1.8: Public Participation Spectrum (IAP2, 2007)

Figure 1.9 shows the five sequences of the Public Participation Spectrum placed in the diagram of the UAD arena. The five levels are not intended as “air-tight” compartments. Although the spectrum is often referred to as a continuum, this research prefers the term spectrum, because the definition of continuum might suggest that the consecutiveness of the five levels means that the highest level is always the goal. This is not the case; each level of participation has its usefulness and relevance in specific circumstances (FSH, 2008).
The spectrum between government and civil society represents different forms of state-civil relations. Each of the five levels has its own degree of participation. The development process in the first two levels (inform and consult) is controlled by the government. The levels “involve” and “collaborate” are partnerships; government and civil society share power over the decision-making process and, in the latter, also over the implementation. The last level, “empowerment”, indicates that civil society takes control over the development while the government takes on a facilitating role.

There are many different practical methods related to each of the levels. Looking back at figure 1.1, there is a noticeable distinction in the participatory development paradigm between concepts linked to top-down and bottom-up developments. The difference between these two approaches is in the key characteristics on which the development strategy is based. The next section explains these differences.
2.3.4. **Top-Down & Bottom-up**

According to Robles-Duran (2011) currently two parallel urban practices in the Western world enfold; one that is based on neoliberal top-down public private urban projects and one that focuses on local bottom-up multidisciplinary urban ‘collectives’. These practices take various organizational shapes: collectives, crowdsourcing, and crowdfunding.

In urban area redevelopment, top-down and bottom-up approaches can both be found, but more often elements of these two are present in a single approach. Both approaches, when used to structure post-disaster redevelopments, ultimately share the same goal of getting a community back to its status-quo.

**Top-Down**

The top-down approach is the most used approach in post-disaster redevelopment, due to the institutional nature of the emergency management structures.

The top-down approach has a significant philosophical and practice history, predating the bottom-up approach. The top-down approach is focused on the use of professional leadership provided by external resources that plan, implement, and evaluate redevelopment projects (Macdonald, 1995). In top-down approaches, knowledge or expectations are used to guide planning and implementing projects. Its nature is often exogenous; it is sometimes criticized for creating dependency, as communities might tend to lean on outside institutions and funds.

**Bottom-up**

When planning and implementing developments, the bottom-up approach is aimed at piecing together data until a bigger picture is arrived at, instead of relying on premeditated knowledge or expectations. It uses local knowledge tied to what the community perceives its own development needs to be. A bottom-up approach focuses on local assets (individual capabilities, relationships, local institutions, local economy, and the physical environment) and aims to improve a neighborhood from the inside out (endogenous) by improving existing local assets and creating new ones. It is often criticized by government institutions for being time-consuming & complicated, especially if times of crisis ask for swift and structured decision-making.

Bottom-up development can bring innovative solutions and, while systems tend to resist innovation, they are enticed by solutions that focus on results. The bottom-up approach can also play an important role in terms of resources available to accomplish post-disaster redevelopment. Government agencies are often challenged by insufficient resources with which to accomplish the work they want to do, and are limited in the actions they can take because they have to prioritize how money is spent. Communities that have identified their own assets and resources and bring those to the table may attract government entities who feel otherwise unable to support community initiatives.

**The partnerships in-between**

The spectrum of participatory development indicates that between the two extremes of top-down and bottom-up approaches, there is a wide variety of possible partnerships. Governments and their representatives can be enablers and facilitators of bottom-up developments, or function as barriers to community work. When individuals and communities think about the government and its role in developments, there is a tendency to generalize and lump “government” into a single category that then obscures the meaning of their response to whatever action government officials are taking. For community members, distinguishing, for example, between politicians, bureaucrats, and civil servants is important when trying to understand the motivations and meanings behind their actions. Additionally, there are various levels of government that must be taken into consideration when trying to interpret or develop an approach to government officials:
federal, provincial/state, regional, and local/municipal agencies, boards, and commissions. And within these government categories there are various departments, each with a responsibility for specific policies that are not always consistent across departments.

Several factors influence how government entities might respond to the alternative a bottom-up approach offers them in their own work. If communities organize themselves, identify their own assets, and approach governments with concrete ideas, government entities are better able to offer assistance in implementing community-generated solutions. In spite of the difficulties they may encounter, communities will fare best if they can be part of an ongoing conversation with government. Government agencies do not have answers for every problem, and often appreciate suggestions their community partners offer. Communities using the bottom-up approach can also help focus/refocus governments on appropriate strategies and results.

2.3.5. Conclusions
Participatory development as an alternative or addition for prevailing institutional structures has been around for a long time. Because of the evolution (and often confusion) of the participation vocabulary, development practices have to understand the different perceptions of participation among stakeholders before projects can be planned and implemented.

There are various levels of participatory relationships between government and civil society, and each of these levels had its own usefulness. Participatory development can be initiated by government, residents, or by mutual efforts. The nature of the initiative and the focus of the approach on either problems to be solved or capacities present, indicate the extent to which an approach is top-down or bottom-up. For each level of participation, for both approaches and any type of mixed approach, plenty of possibilities and corresponding examples from practice exist.

These conclusions support the execution of the case study in chapters 4, 5, and 6. The next chapter explains the methods used to apply the theory of this chapter in order to conduct the field work of this research and ultimately answer the main question.
2.4 Conclusions

The theoretical framework presents the results of an extensive literature review. Two main topics are discussed: Post-Disaster Redevelopment and Participatory Development. Both topics are placed within the field of Urban Area Development and explained accordingly.

Post-Disaster Development

- Every phase has its own characteristics
- Every phase has its own activities
- Importance of participation is evident
- All participation models for post-disaster redevelopment rely on pre-disaster implementation.

The conclusions drawn from the section on Post-Disaster indicate that it has its own challenges, objectives and characteristics that sets it apart from other forms of urban area development. Every phase of the post-disaster redevelopment cycle comes with its own activities. While there are many sources that extensively explain the nature of the post-disaster redevelopment cycle and unanimously underline the importance of at least some form of community participation, there are no detailed models of how communities can be included in practice.

Participatory Development

- Five levels of participation
- Every level has its own usefulness
- Levels are based on extend of top-down or bottom-up approach
- Can be initiated by both stakeholders

The conclusions drawn regarding Participatory Development show that it is possible to form a single, clear conception of the term by analyzing the most important literature concerning this topic. This will support a mutual understanding among government agencies and residents when redevelopment discussion the matter of participation. There are various levels of participatory relationships between government and residents, and each of these levels had its own usefulness. Participatory development can be initiated by government, residents, or by mutual efforts. The nature of the initiative and the focus of the approach on either problems to be solved or capacities present, indicate the extent to which an approach is top-down or bottom-up.

<table>
<thead>
<tr>
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<th>Involve</th>
<th>Collaborate</th>
<th>Empower</th>
</tr>
</thead>
<tbody>
<tr>
<td>Government decides and informs residents about their decision.</td>
<td>Government decides, but gives residents a chance to voice their opinion.</td>
<td>Government and residents make plans together, the government executes the plans.</td>
<td>Government and residents collaborate in planning and execution.</td>
<td>Residents decide and execute plans, government supports if necessary.</td>
</tr>
</tbody>
</table>

Fig. 5.22: Simplified Spectrum of Participation as used in the Online Questionnaire.

A clear concept of participation is provided. The conclusions regarding participatory development and the spectrum of participation are ready for use in subsequent research steps.
3 Methodology
3.1 Introduction
This chapter discusses the general characteristics of the methodology used in this research. Reviewing literature and precedents on the applied methods is necessary in order to secure the reliability of the research. Figure 3.1 (page 41) shows the research design. An elaborate visualization of the steps taken in the chapter 5 section of the research design is provided in figure 3.2. This figure offers a closer view on the methods used and in what consecutive steps they will be implemented.

The Delphi method is used to identify key factors in recovery of the Lower Ninth Ward according to two different stakeholder perspectives. The Atlas.ti software is the method of choice for the data processing of the first round. Thereafter, the Delphi method uses the results of the first round to execute the second round: ranking the disclosed variables using the spectrum of participation as derived from the theoretical framework (chapter 2, page 38). Additionally, panelist are asked to provide ideas on how the selected rankings could work in practice.

3.2 Case Study Research
This research is an embedded case study; multiple units of analysis are present within the same case (Yin, 2003). In order to analyze these units, a mixed methods approach is used. The first sub-question is answered by using the Delphi method for consensus research. The second sub-question is answered by interviews, data analysis, and field work.

According to Yin (2003), case studies can be useful when the researcher has little control over events and when the focus is on a contemporary phenomenon. Additionally, when research requires an intensive, in-depth investigation within a unit of observation as opposed to a more extensive, generalizing approach, a case study is the method of choice (Swanborn, 2010). Because every post-disaster redevelopment is complex and unique, and the object of study is an area that is still in the middle of recovery, the choice was made to do a single in-depth case study.

The selection of the case is based upon the second rationale by Yin; the Lower Ninth Ward is an extreme case. The typical or average case is often not the richest in information. Extreme cases have the potential to reveal more information because they activate more actors and more basic mechanisms in the situation (Flyvbjerg, 2006). The perspectives of different stakeholders on a number of variables are analyzed. This research is therefore an embedded case study; multiple units of analysis are present within the same case. In order to analyze these units, a mixed methods approach is selected. A combination of interviews, a literature review, field work, and the Delphi method is used to execute the case study.
Theoretical Framework

To provide a clear concept of participation.

Methodology

To provide a model that allows excluded communities to enter the recovery process by building on mutual understanding and interests among local government and residents.

Case Study

What are the perspectives of the city government and the local community on recovery and participatory development in the Lower Ninth Ward?

Identification of project-based mutual interests, including specified recommendations.

H5

In what ways can the methods used in the case study contribute to the prevailing models of participation in post-disaster redevelopment?

How can the differences or similarities in the perspectives of the city government and the local community identify opportunities for local recovery projects?

H6

H7

Conclusion

How can a community start participatory developments in the recovery phase by working towards consensus with the local government in order to overcome being left out of the post-disaster redevelopment process?

Fig. 3.1: Overview of the Research Design.
3.3 Delphi

The Delphi method was devised at Rand Corporation in the 1950s (Dalkey & Helmer, 1963) as a means to handle opinions rather than objective facts. The evaluation of the perspectives of the city government and the local community needs such an approach, because of the subjective nature of the perspectives involved. It is considered a useful technique for tapping and combining individual judgments in order to address a lack of agreement or an incomplete state of knowledge (Delbecq et al. 1975), but this approach is also useful to form group consensus (Remoy, 2010). This research focuses on the redevelopment process in the Lower Ninth Ward; how progress is affected by divergent perspectives on local projects and participation of the stakeholders involved; and what possible opportunities may come from exposing the underlying factors in the process & progress of local recovery projects. The Delphi method is used to execute the first step of disclosing the perspectives of the stakeholders, by documenting and combining the individual perspectives of panelists. These results will then be analyzed in order to address a possible lack of agreement & incomplete state of knowledge. The potential of using the Delphi method as a means to form group consensus in order to create opportunities for the recovery process is discussed chapter 7.
3.3.1. **Technique**

The Delphi method was developed to predict long-range trends in science and technology. It has been extended to applications in policy formations and decision making and has become a widely used tool for validating and aiding forecasting and decision making in a variety of disciplines (Remoy, 2010). Delphi has been well explored in a variety of areas, including government, medical, environmental and social studies, as well as business and industrial research (Linstone and Turoff, 2002).

There are various types of Delphi approaches which correspond to the envisioned goal of the researcher: the method has been primarily employed for forecasting, planning, issue identification/prioritization, or for framework/strategies development (Okoli and Pawlowski, 2004). This research uses the Delphi ranking approach in order to identify key variables and subsequently rank them according to the perspective of the panelists on the spectrum of participatory development as derived from the theoretical framework. By doing so, the panelists will reveal their view on the feasibility of participatory development projects regarding each of the variables, thus making it possible to recommend tailored project-based recommendations.

*For example, if the hypothetical variable ‘access to food’ would be assessed by a panelist, he could indicate that he believes the recovery of the neighborhood regarding food accessibility is something to be dealt with top-down, where government officials inform the community about available options. Another panelist might consider that the variable ‘access to food’ can be placed at a different level of the spectrum, where the City partners with the community to identify alternatives, select preferred solutions and execute the implementation of jointly planned projects.*

3.3.2. **Data Collection**

According to Remoy (2010), several considerations should be taken into account to ensure the credibility of Delphi findings. First, the appropriateness of the Delphi method to address a specific subject should be defined (Fink et al. 1991). Second, clear guidelines should exist for the ranking procedure and for the number of objects to be used in subsequent rounds (Schmidt 1997). Third, the data collection procedures and format of the feedback to the panel members should be considered. Fourth, a rigorous procedure should be used to identify and select relevant experts (Delbecq et al. 1975).

The appropriateness is addressed in the introduction of section 3.3 by establishing the relevance of the Delphi method due to the ability of the method to deal with divergent perspectives of stakeholders. Guidelines for the data collection and ranking procedure are explained chapter 5 and can be found in its entirety in appendix A. Data is collected in two ways: through interviews and through an online questionnaire. Ideally, all data should be collected by interview procedures. Due to time constraints and the distance to the case study location, the choice is made to use online questionnaires as well. The selection procedure of panelists is addressed in section 3.3.3.

Commonly, a Delphi approach consists of two to four rounds of questions. The number of rounds depends on whether the research started uninformed with open questions or with a list of issues, the time available, and considerations of sample fatigue (Hasson et al. 2000). Typically, the first round is uninformed and consists of open questions. The open structure of the first round allows participants to elaborate on the topic investigated (Rowe 1994) and is believed to increase the richness of the data collected. The aim of the first round is to identify issues to be addressed in the subsequent rounds (Powell 2003). Limited time and possible sample fatigue suggested a two round structure for this case study.
3.3.3. The Panels

The Delphi method uses an iterative feedback technique with a group of experts (Schmidt, 1997). This research aims to compare the group results of one type of stakeholder (city government) with the group results of another (local residents) in order to identify common grounds and differences in perspective. Therefore, two panels perform the Delphi separately. This way the results can be compared not only within each panel, but between the two panels as well. The results of the first round can subsequently be assessed and reviewed by both panels combined in round two.

There are two key aspects to consider in the composition of the expert panels; size and the qualifications of the experts (Remoy, 2010).

The group size does not depend on statistical power, but rather on group dynamics for arriving at consensus among experts. Thus, the literature recommends 10-18 experts on a Delphi panel (Okoli & Pawlowski, 2004).

The qualification of the experts is mentioned in section 3.3.4 as a possible pitfall in the execution of the Delphi method. This has come to light during the case study research in the United States. The initial criteria for the panel of the local community addressed local knowledge and a mix of panelists currently living in the Lower Ninth Ward, and evacuees who never returned. The reasoning behind the second criterium was that in order to establish a representative panel, it is not sufficient to use returnees only, for these are the people who probably have a higher capability to initiate and partake in participatory development as they managed to return and rebuild their lives on their own. That is why initially, the community panel consisted not only of returnees, but also of former community members who did not return. But during the execution of the first round, it became apparent that evacuees are in fact not appropriate panel members, because they do not sufficiently meet the first criterium of panelist qualification: local knowledge. Interviews with researchers from the Population Association of America and local community leaders have been conducted in order to establish proper criteria for the selection of members for the local community panel. These criteria are explained chapter 5.

3.3.4. Criticism

The Delphi method has been subject to criticism regarding its efficacy. The following pitfalls of the method which are relevant to this research have been identified through a literature study:

1) The majority of studies have used structured first rounds in which event statements – devised by experimenters – are simply presented to panelists for assessment, with no opportunity for them to indicate the issues they believe to be of greatest importance on the topic, and thus militating against the construction of coherent task scenarios (Rowe & Wright, 1999).
2) Questions do not relate to the domain of knowledge of the specific panelists (Bolger & Wright, 1994).
3) No proper feedback structure is established, which limits the accuracy of the resulting consensus (Rowe & Wright, 1999).

In order to secure the validity of this research, these three concerns are addressed through the design of the Delphi method as applied in this case study. The design is discussed in section 5.1 and section 5.2.
3.4 Atlas.ti

Atlas.ti is the method of choice for the first round (figure 3.2). Atlas.ti is a tool that enables the researcher to strategically and scientifically analyze data in a qualitative research. Quotes are linked to codes, enabling the researcher to easily track, code, and analyze elements of the transcripts. The goal of this application is to identify codes and families of codes in order to use those results in the second round of the Delphi method. Though this might not be the fastest way to analyze interviews, in this case it is the preferred method, due to the open structure and the importance of starting the Delphi method with stakeholder knowledge instead of variables derived from literature. The results of Atlas.ti will be analyzed with the use of literature before the final thesis will move on to round two of the Delphi method.

3.4.1 Problem Statement of the Atlas.ti Application

Both panels of stakeholders have differing perspectives on how the Lower Ninth Ward should be redeveloped and why it is lagging in recovery. The generalized tone of the discussion and numerous misunderstandings have contributed to the current state of the neighborhood. So far, no attempts have been made to address issues on a project basis. In order to assess the differences in stakeholder perspectives and subsequently comprise a list of variables usable for both stakeholders in later steps in the Delphi method, the interviews have to be analyzed in a systematic and scientific manner, that is still flexible enough for iterative theory building.

3.4.2 Objectives of the Atlas.ti Application

The goal of using Atlas.ti to process data is to analyze the transcripts of the interviews conducted amongst various stakeholders: a panel of residents and a panel of government officials. The Atlas.ti software is used to present the interview data collection, data analysis, and results of the first round. The goal of this first round is to identify key factors through the assignment of codes, which can then be used as variables in the other two steps of the Delphi method. The results of this assignment will provide an identification of factors that could help the Lower Ninth Ward recover, but are currently insufficiently present or not present at all (according to the interviewees). In addition to this result, it will be possible to address differences in perspective between the two panels. This second objective is essential in order to address the differences on a project-scale base at a later point in time.
3.4.3. Research Question for the Atlas.ti Application

In order to answer sub-question 1, the graduation research uses the Delphi method. The first step in the Delphi design is the analysis of interviews through Atlas.ti. The style of the interviews is open structured, as prescribed by the Delphi method (see also chapter 5). The question used in all interviews is:

INTERVIEW QUESTION – OPEN STRUCTURE
Can you list factors, whether they are social; economic; or physical - or of any nature you can think of - that in your opinion could help the Lower Ninth Ward recover, but are currently insufficiently present or not present at all?

The interview protocol can be found in appendix A.

3.5 Ranking Questionnaire

Due to the time constraints of this research, the second round of the Delphi method is conducted online. The purpose of this round is to have panelists rank the variables from the first round on the scale of participatory development (figure 3.3) as derived from the theoretical framework.

<table>
<thead>
<tr>
<th>Inform</th>
<th>Consult</th>
<th>Involve</th>
<th>Collaborate</th>
<th>Empower</th>
</tr>
</thead>
<tbody>
<tr>
<td>Government decides and informs residents about their decision.</td>
<td>Government decides, but gives residents a chance to voice their opinion.</td>
<td>Government and residents make plans together, the government executes the plans.</td>
<td>Government and residents collaborate in planning and execution.</td>
<td>Residents decide and execute plans, government supports if necessary.</td>
</tr>
</tbody>
</table>

Fig. 3.3: The spectrum of participatory development as used in the second round of the Delphi method.

Because the second round actually combines two rounds into one, thus adding a third round to the Delphi design, the online questionnaire consist of two separate sections. The first section asks panelists to rank each of the variables on the spectrum of participatory development by checking the corresponding box in a matrix. The second section asks panelists to give an example of how they think that the rankings they have made could work in practice. The complete protocol and questionnaire can be found in appendix B. The processing of the data collected in this round is explained in chapter 5.

3.6 Conclusions

This chapter set out to discuss the general characteristics of the methods used in this research in order to secure the reliability.

The analyses of the various methods made the importance of establishing protocols and taking critiques into account apparent. Literature reviews and consultance with academic experts regarding the protocols assures the collecting and processing of data is executed in an appropriate manner. The points of critique that came to light have been accounted for in order to maximize the reliability of the research.
4 Case Study
4.1 Introduction

This chapter explores the general characteristics of the case study context. Geographic, political and socio-economic elements are analyzed in order to understand the background of this research. All these aspects are directly influencing the process of redevelopment (see also section 2.2.2, page 26). In order to comprehend the current situation in the Lower Ninth Ward, New Orleans and its need for research, it is important to recognize its socio-economic and political context on a larger scale as well.

This chapter opens with an analysis of the framework of structures that influences urban area development on a national level.

The second section looks into the characteristics of New Orleans and the effects of Katrina on the city.

The last section provides a detailed overview of the history, the characteristics of the community, and the current progress in recovery of the Lower Ninth Ward.
4.2  National Structures
This section explains the framework of structures in the United States of America that influences urban area development in general.

4.2.1. Government
American government is not a simple hierarchy of authority from national to state to local level (Rusk, 2001). It is a federal system in which the federal (or continental) government has only the powers that are explicitly conferred upon it by the federal constitution as amended periodically (only 27 times in 212 years) or interpreted by the U.S. Supreme Court. The American constitution is silent on the question of local government. Therefore, under the 10th amendment, all power over how local governments are organized and what they are authorized to do is reserved to state governments. Municipal and county governments (as well as independent public school boards, etc.) are “creatures” of state government. The federal government does not have a central control over land use planning and zoning (Cullingworth & Caves, 2009). The United States Congress has no more formal role in land use planning with regard to state governments than the Parliament of the European Union or its other political bodies have with regard to European member states (Rusk, 2001). In reality, though, the federal government has had a huge impact on urban development through its capital expenditures, housing finance role, tax policies, and environmental regulations. The Department of Housing and Urban Development for example, operates numerous programs aimed at issues within housing and community development (Donovan, 2013).

In short, the federal government does not have an agency devoted to “spatial planning”. However, many federal “rules of the game” (direct and indirect) shape land development as surely, if less visibly, as if the federal government were issuing Dutch-style planning ‘nota’s’ (Rusk, 2001).

The State’s power regarding area development is immense. This is illustrated by the following court ruling:

“The State [i.e. state government] ... at its pleasure may modify or withdraw all [city] powers, may take without compensation [city] property, hold it itself, or vest it in other agencies, expand or contract the territorial areas, unite the whole or a part of it with another municipality, repeal the charter and destroy the [municipal] corporation. All this may be done, conditionally or unconditionally, with or without the consent of the citizens, or even against their protest. In all these respects the State is supreme, and its legislative body, conforming its action to the state constitution, may do so as it will, unrestrained by any provision of the Constitution of the United States.”

- U.S. Supreme Court decision in Hunter v. City of Pittsburgh (1907)

Ultimately, state governments – state legislatures, governors and executive agencies, state courts – control the “rules of the game” at both state government and local government levels. Thus, the USA, in theory, has fifty different land use policies among the fifty different states just as, at present, the European Union has 15 different land use policies among its 15 member states (Rusk, 2001). In reality, there are three broad categories into which the State of Louisiana’s impact on land development falls:
a) State planning and investment in roads, highways, and other public works

State highway departments have been the federal government’s partners in building the nation's road and highway system. The broad outlines (and substantial details) of America’s suburbanization were decided not by professional urban planners nor by local elected officials but by federal and state highway engineers. It was not until the Congress enacted the federal Inter-modal Surface Transportation Efficiency Act of 1991 (called ‘ice tea’) that local governments achieved real influence over major transportation planning.

b) Tax policies for local governments

About 77 percent of municipal government budgets in the USA come from local taxes and fees; state governments provide 16 percent; and the federal government provides just 7 percent (always for specified programs and purposes). American cities rely heavily on property taxes; receiving on average 40 % of their accumulated income from property tax revenues.

However, American municipalities do not control 77% of their own fiscal destinies. What specific taxes they can levy (and sometimes what fees they can charge for services) depends on what state legislatures authorize municipalities to do.

c) Planning and zoning powers delegated to local governments by state laws

Unlike the Dutch government, no American state government issues periodic planning “nota’s.” However, every state has enacted general laws authorizing local government to regulate land development. Most state municipal land use codes are remarkably similar. The typical state municipal planning code authorizes a municipality to “protect the public health, welfare, and safety” of its residents (the so-called “police powers”) through regulating land use. Municipalities are to establish a general comprehensive plan and adopt a zoning map to implement the plan. Typically, planning and zoning seek to segregate land uses – residential neighborhoods separated from retail stores as well as from office and industrial parks, single family homes separated from apartments.

The state sets out the framework in which the local governments operate when shaping their specific land use regulations. Therefore, land use planning in the US is largely a local matter (Cullingworth & Caves, 2009). The common way to execute any large scale area development is for municipalities to offer land to the highest bidder and thus leave the process of area development to the private sector, who are free as long as they stay within the framework of government rules. In this process, the private sector is responsible for development proposals, while the public sector is responsible for regulating them (Cullingworth & Caves, 2009). There are cases of area development through local bottom-up initiatives; two of the most successful examples are shown in box 2.1.

The local government exercises planning power through an institutional & legal framework. As mentioned in paragraph c, municipalities have to provide a comprehensive plan. This plan describes a vision for the future of a community. Part of this comprehensive plan is zoning regulations. In reality, American cities seldom make and never carry out comprehensive plans (Cullingworth & Caves, 2009) except for the zoning regulations. These regulations indicate what functions are allowed (e.g. industrial, residential, and mixed-use).
The Dudley area is one of the poorest neighborhoods in Boston. Residents came together out of fear and anger to revive and protect their neighborhood. More than half of the 1,300 abandoned parcels have been permanently transformed into over 400 new high quality affordable houses, community centers, new schools, Dudley Town Common, community greenhouse, parks, playgrounds, gardens, an orchard and other public spaces.

Also known as 'Motor City', Detroit was once an icon of the American Dream. But years of decline in economy and population have left Detroit with high unemployment rates, social issues, and abandoned lots throughout the city. Residents and community groups started using these empty spaces for urban farming. The C. Ferguson Academy for Young Women is not only schooling its students in regular subjects, but also in agriculture.

### 4.2.2. Socio-Economic Context

As the previous section showed, there is a clear and influential role of the government in shaping cities and metropolitan regions. Whether intended or unintended, many government policies have aided and in some cases subsidized suburban sprawl, job flight, and spatial mismatch; concentrated urban poverty; and heightened racial and economic disparities (Bullard, 2007). Where you live impacts the quality of your life. Many of the older, inner-ring suburbs, those contiguous to the core cities, are losing population and exhibit declining incomes relative to their surroundings, while new developments farther out are booming with jobs and economic opportunity (Anthony, 2007). The way cities are shaped has direct consequences for the socio-economic situation of its residents.

But the government policies of the last few decades are not the only determinant of socio-economic problems. Most issues are rooted deep in the history of the United States. Arguably the most important event in the formation of the socio-economic state of American communities is the racial segregation & the civil rights movement. Nowadays, the effects of racial segregation can still be seen and are most pronounced in housing. In terms of home ownership, the rate for Caucasian Americans has jumped from 65 percent to 75 percent since 1970. African-American home ownership has only risen from 42 percent to 48 percent (Powell, 2007). Although people of different races may work together, they are still very unlikely to live in integrated neighborhoods (Keating, 1994). But a large racial gap in economic terms is noticeable as well:

"In 1968, the typical black family had 60 percent as much income as a white family. Today it has only 58 percent as much. In 1968, for every dollar of white per-capita income, African Americans earned fifty-five cents. Today they earn only fifty-seven cents. [...] Black unemployment is more than twice the white rate – a wider gap than in 1972."

(Powell, 2007)

This is due to a number of causes which are often labeled as structural racism. The structural racism approach argues that historical forms of discrimination in institutions and structures have contemporary effects. For example, as stated in the National Housing Act of 1934, the government explicitly offered subsidies to Caucasian Americans, would only fund houses in racially homogeneous, white neighborhoods, and favored the purchase of homes in the suburbs. The
underwriting manual for home mortgage insurance disseminated by the federal government was explicitly racist:

“Areas surrounding a location are [to be] investigated to determine whether incompatible racial and social groups are present, for the purpose of making a prediction regarding the probability of the location being invaded by such groups. If a neighborhood is to retain stability, it is necessary that properties shall continue to be occupied by the same social and racial classes.”

(IRP, 2002)

Furthermore, the federal government pushed home purchasers to adopt covenants that prohibited the future sale of these government-subsidized homes to people of color (IRP, 2002). Also, the opening up of suburban terrain to “whites only” during this period has had crucial impacts on how metropolitan regions have developed. So, even though the civil rights movement officially ended racial segregation (altering arrangements that regulated housing, public accommodation, voting, schools, and assisted African-Americans in moving to urbanized areas and accessing lower-level industrial jobs), the simultaneously upcoming suburbanization (government created new programs, resources, and jobs for Caucasian Americans outside the central cities in order to deal with the post-war economic changes) countered the progressive effects of the civil rights movement by creating a ‘white flight’. As African-Americans poured into industrialized cities looking for opportunity and inclusion, opportunity was being relocated to emerging suburban white enclaves with new forms of legal protection (Powell, 2007).

Unfortunately, these events have led to social exclusion still being a very present phenomenon in today's American cities.

The contemporary effects of these policies can be seen in home ownership rates and housing location. For example, because homes are often transferred through inheritance - over 20 percent of ownership transfers annually (Sepanik, 2002; U.S. Department of Commerce, 2013; Wolff & Gittleman, 2011) - the current generation is indirectly experiencing the consequences of racism within previous generations.

4.2.3. Emergency Management in the United States

With the government structure and the socio-economic context clear, the next step is to look at what happens in the United States when a disaster takes place.

Even the most carefully designed emergency plan is unlikely to anticipate all the requirements for action in any given disaster (Hooper, 1999). Or, as Quarantelli (1981) stated: “planning is not management and management is not planning” (Quarantelli, 1981). The network that emerges is complex and represents segments of numerous agencies that now must work together in ways that are a sharp contrast to their work in normal times when relatively high degrees of unit autonomy define the prevailing structures (Drabek, 2003). This section explains the framework of emergency management in the United States.

There are several methods for government response to emergency situations. A state governor or local mayor may declare a state of emergency within his or her jurisdiction. This is common at the state level in response to natural disasters. Each state has its own emergency preparedness and response plans. While the details of each state’s emergency preparedness and response plans vary, the overall structure is regulated by the federal government. Each state must designate one agency as the lead emergency preparedness agency. It must serve as the central coordinating authority for all state-level actions as well as the point of contact for local and federal authorities (Mener, 2007).
When state and local resources are completely overwhelmed, a state governor can request federal assistance but must do so by explicitly claiming that local and state resources are overwhelmed. It is important to realize that even when the President wants to provide federal disaster relief, he is not allowed to unless a state government has requested so (Mener, 2007).

When the President of the United States agrees with the request, he declares a state of emergency, and the federal government is empowered to name coordinating officials to deal with the emergency and to override normal administrative processes regarding the passage of administrative rules. This means that the government structure as explained in section 2.1.1 changes. A federal emergency declaration allows the United States Federal Emergency Management Agency (FEMA) to exercise its power to deal with emergency situations; federal assistance also becomes available to areas that are declared to be in a state of emergency.

The Stafford Act is the legal basis for the activities of the Federal Emergency Management Agency (Nathan & Landy, 2009). The act spells out - among other things - how disasters are declared, the types of assistance to be provided, and the cost sharing arrangements between federal, state and local governments (Evans, 2009). The Stafford Act is designed to bring an orderly and systemic means of federal natural disaster assistance for state and local governments in carrying out their responsibilities to aid citizens. In other words, the federal government acquires the power to override state and local procedures in order to steer and assist in the emergency response, but the responsibility to initiate and implement emergency response still lies with the state and local governments. State and local governments have less influence, but retain responsibility. In the case of Katrina, this has led to endless conflicts between agencies and eventually led to everyone blaming everyone for the resulting catastrophe. For a city struck by disaster, the actual chain of command when a state of emergency is declared is:

1) The Mayor
2) The director of Homeland Security (a political appointee of the Governor)
3) The Governor
4) Department of Homeland Security / FEMA
5) The President

In other words, all responsibility for proactive preparedness and reactive response & recovery begins at the local level (Alexander, 2013).

**Federal Emergency Management Agency**

As shown in the chain of command, when a state of emergency is declared, a new governmental body enters the arena: the Department of Homeland Security, including FEMA. The Department of Homeland Security is the administrative body, where FEMA is the executing agency regarding emergency management. The origin, structure and operations of FEMA are explained in order to understand the consequences of this change in government structure and FEMA's actions regarding New Orleans and the Lower Ninth Ward.

In 1979, in the wake of Hurricane Agnes and the Three Mile High nuclear accident, Congress and President Carter through a combination of legislation and an executive order established the Federal Emergency Management Agency (FEMA) and the Emergency Management Council. In theory, the creation of FEMA consolidated the disaster preparedness responsibilities performed by various federal agencies into one agency, thereby alleviating the fragmentation and communications difficulties identified in the 1970s. The executive order required that all federal agencies with disaster response capabilities and responsibilities cooperate with FEMA and tasked FEMA with coordinating preparedness as well as relief operations. While the reorganization requested cooperation from all federal agencies with emergency response capabilities, the system did not subordinate them to FEMA. The hope was that the newly created Emergency Management
Council, which was chaired by the FEMA Director and included all federal agencies with disaster preparedness responsibilities, would enhance FEMA's stature within the federal bureaucracy and give the new agency the clout necessary to effectively coordinate disaster preparedness and response (Miskel, 2006). However, the creation of FEMA really only promised to affect disaster preparedness and held little hope of improving disaster response. Most major elements of disaster response were left untouched during the reorganization. Although the establishment of FEMA involved some agency consolidation to facilitate the overall coordination of federal disaster relief and preparedness efforts, the truth is that federal resources remain dispersed amongst many agencies and the overall role of the federal government as a secondary resource remained unchanged. In fact, activation of federal resources both before and after the creation of FEMA has required states to request federal aid and has required federal certification that state and local governments are in fact overwhelmed (Mener, 2007). FEMA maintains a very small staff, however, and only acts as a direct resource for a few types of relief. For example, FEMA is able to allocate temporary housing such as tents and mobile homes. The agency can distribute cash grants to disaster victims and has some limited abilities to actually get federal aid supplies to disaster regions. But FEMA does not maintain its own fleet of trucks, planes, or railroad cars. Rather, the agency must rely on cooperation from 29 different federal agencies and departments (Schneider, 1995).

Most Americans, when asked who is to blame for the failed emergency response to Hurricane Katrina, will probably point to the federal government, in general, and to FEMA, in specific (Mener, 2007). Mistakes were made on all levels and as to why or how the response exactly failed as bad as it did in New Orleans will probably remain a matter of debate. The next section provides an analysis of New Orleans; a timeline of what happened in New Orleans when Katrina hit the city; how the emergency management functioned in this particular situation; and what the effects were on the urban area and its residents.
4.3 **New Orleans**

Figures 4.1, 4.2, and 4.3 show the location of New Orleans in the United States & in the State of Louisiana, and the location of the Lower Ninth Ward in New Orleans.

New Orleans is a major United States port and the largest city and metropolitan area in Louisiana. According to the 2010 Census, it has a population of 343,829. It is located in south-eastern Louisiana on the banks of the Mississippi river and south of Lake Pontchartrain. Only 51% of the city is at or above sealevel.

New Orleans is famous for its French and Spanish Creole architecture and known for its cross-cultural and multilingual heritage.

*Fig. 4.1: Location of Louisiana.*

*Fig. 4.2: Location of New Orleans.*

*Fig. 4.3: Location of the Lower Ninth Ward.*
4.3.1. Local Government

The city of New Orleans is governed by a mayor and city council. This structure is known as a strong-mayor form of mayor-council government. This structure consists of an executive branch and a legislative branch. The executive branch is governed by the Mayor. The executive branch is the part of government that has sole authority and responsibility for the daily administration of the city. The city council is in charge of the legislative branch and is comprised of seven members, two at large and five others each responsible for a dedicated district (Dessauer & Armstrong, 2006). The legislature branch observes and steers governing actions and authority to amend the budget. The Lower Ninth Ward is part of District E and currently represented by Councilmember James Austin Gray II. Figure 4.6 shows a map of the five districts in New Orleans.

Mitchell Joseph "Mitch" Landrieu is the Mayor of New Orleans. He won the 2006 New Orleans mayoral election, replacing Clarence Ray Nagin, who has been sharply criticized over his handling of both the initial crisis and the recovery efforts. Landrieu was re-elected in 2010, with wide support across racial and demographic lines.
4.3.2. **Timeline of Hurricane Katrina**

**Pre-Disaster: 2004 – August 25, 2005**

On August 25, 2005 Hurricane Katrina struck the Florida coast but caused minimal damage. Every major weather reporting agency, however, predicted that the storm would gain strength in the Gulf of Mexico and strike the New Orleans region with the incredible power of a category 5 hurricane (Mener, 2007). The threat faced by New Orleans in August 2005, however, was not unanticipated.

First of all, in July 2004, FEMA staged Hurricane Pam: a five-day mock storm scenario with a category 3 hurricane (Reynolds, 2005). The exercises involved officials from federal, state, local, and voluntary organizations and took place at the State Emergency Operations Center in Baton Rouge, Louisiana. According to the scenario, more than one million residents were evacuated from New Orleans and between 500,000 and 600,000 buildings were destroyed as water flowed over the levees (FEMA, 2004). It was expected that evacuation attempts in New Orleans would only be half successful, especially since approximately 100,000 people live in households that do not own cars. In the Lower Ninth Ward, one third of the households has no access to a motorized vehicle (GNOCDC, 2002). The exercise identified the need for 1,000 shelters for evacuees, found locations for 784 shelters, and developed a plan to find locations for the remaining shelters (Louisiana Homeland Security and Emergency Preparedness, 2004; Mener, 2007). The plans were never executed.

Secondly, after hurricane Betsy in 1965, Congress authorized the Army Corps of Engineers to build a levee system capable of withstanding the most severe weather disasters. However, 40 years later, when Hurricane Katrina struck New Orleans, the project had not been completed. Most authorities estimated that the pre-Katrina levee system would struggle to withstand even a Category 3 hurricane (Mener, 2007).

**Response: August 23, 2005 – October, 2005**

While the storm gained strength over the warm waters of the Gulf of Mexico, the State of Louisiana began to take serious precautions.

**Friday, August 26** - Governor Kathleen Blanco of Louisiana declares a state of emergency. State officials suggest voluntary evacuations, open emergency shelters, position emergency supplies in the shelters, alert National Guard forces, and activate emergency operations centers (Miskel, 2006).

**Saturday, August 27** – The director of FEMA announces that “There's still time to take action now, but you must be prepared and take shelter and other emergency precautions immediately” (Reynolds, 2005).

**Sunday, August 28** – Mayor Nagin of New Orleans announces a city-wide mandatory evacuation. Tens of thousands of New Orleans residents begin streaming out of the city. But in the evening, still thousands of New Orleans residents are unable to leave town or have chosen not to leave. Some seek shelter in the Louisiana Superdome, others stay at home. The city failed to make provision for those who were unable to evacuate on their own — those who did not own cars, the disabled, the elderly, and tourists left stranded when the supply of rental cars ran out (Nathan & Landy, 2009).

**Monday, August 29** – The first levees in New Orleans start to overtop and breach in the early morning. The levees on the west side of the Lower Ninth Ward, protecting it from the Industrial Canal, breach at 7:45 a.m. and a flash flood destroys most of the neighborhood. The northern levees, separating the Lower Ninth Ward from the Florida Canal, overtop a couple hours later, completing the destruction. By the end of the day, most of New Orleans is flooded and floodwater levels of over 10 feet (three meters) are reported in the Lower Ninth Ward.
It is still unclear how many of the people who stayed in their houses died this Sunday, but reports estimate the number between 2000 and 5000 for the city of New Orleans alone.

**Wednesday, August 31** – The State of Louisiana declares a public health emergency. Every remaining resident is ordered to leave the city, but people stranded at the Superdome are unable to; school buses are unavailable because they had not been moved to high ground (Nathan & Landy, 2009).

**Thursday, September 1** - On national television New Orleans Mayor Ray Nagin issues a "desperate SOS" for help from the federal government.

**Friday, September 2** - A convoy of U.S. National Guard troops and supply trucks arrives in New Orleans and distributes food and water to residents stranded at the Superdome and convention center. Congress approves 10.5 billion dollars (U.S.) in aid for Hurricane Katrina rescue and relief, and President George W. Bush signs the bill. The work of repairing the city's levees, pumping out the floodwaters, recovering bodies, and finding homes for tens of thousands of displaced residents is underway.

4.3.3. **New Orleans after Katrina**

As discussed in the introduction of this thesis, New Orleans struggled immensely with post-disaster redevelopment. The City Planning Commission (CPC) started drafting the final comprehensive redevelopment plan in 2008, after numerous planning attempts had failed (see also page 12 & figure 1.1). This led to the Master Plan New Orleans 2030, presented in 2010, including zoning ordinances for each district.

Today, some neighborhoods have recovered almost completely and are back to their status quo. Other neighborhoods have never made it past the recovery phase. The next section of this chapter looks into the aftermath of Katrina in one of the neighborhoods that got left out of the redevelopment process and the case study neighborhood of this research: the Lower Ninth Ward.
4.4 The Lower Ninth Ward
With the general characteristics and the socio-economic context of planning in the United States in mind, it is easier to understand how the pre-Hurricane Katrina inequities in New Orleans, as listed in chapter 1, came to be. In order to understand the specific situation in the Lower Ninth Ward, this section analyzes the history of the neighborhood, the local socio-economic circumstances, and the effects of Katrina on the community.

4.4.1 Local History
The Lower Ninth Ward was one of the last districts to be developed in New Orleans. Comprised of only two neighborhoods, the Lower Ninth and the smaller Holy Cross, the Lower Ninth Ward has a mixed history. Known for its social activism and its sense of community, it is also associated with poverty and high crime rates. Covering barely two square miles, it borders St. Bernard Parish to the east and is surrounded by water on its 3 remaining sides—the Florida Canal to the north, the Industrial Canal to the west, and the Mississippi River to the south. First settled after the Civil War, the area’s low-lying, marshy land made the area affordable to the city’s poorest residents.
Newly freed blacks and immigrant laborers poured into the district despite regular flooding and disease. The 1920s brought the installation of municipal drainage systems to the area, but it was not until the 1950s that the Lower Ninth Ward began to develop. The construction of the Industrial Canal along with several bridges connecting the Lower Ninth Ward to the rest of New Orleans sparked a period of commercial and residential expansion. The Lower Ninth Ward experienced social and economic declines in the second half of the twentieth century. The area lost its cultural diversity in the 1960s. Most white residents left the district making the population of the Lower Ninth 98% African American. The shipping industry’s move toward containerization resulted in economic decline and loss of employment opportunities (Morh & Powell, 2007). This neighborhood has the lowest post-Katrina return-rate of the city as well as the highest percentage of poor African-American households and is still struggling to overcome the damage inflicted by Katrina.

Due to the swampy, flood prone nature of the Lower Ninth Ward, it was among the last areas of the city to be fully developed. Despite this, the area does have a long history of habitation and agricultural usage. In the early 1800’s the area development was primarily limited to sugar plantations and other farming activities. The population of the Holy Cross neighborhood alone totaled some 1800 persons by 1852. The early settlers of the area included African Americans, including French Creoles and Free Persons of Color, and poor European immigrants, primarily from Ireland, Germany, and Italy. The low cost of housing in the 9th Ward served to concentrate the population of poor, working class laborers. Only half of the neighborhood had been developed by 1950. Historic data of the area indicate that there were no houses to speak of in the area prior to 1920; this is a reflection of the fact that most of the occupied dwellings were transient in nature and of the lean-to or shanty variety (Dessauer & Armstrong, 2006).

The greatest asset of the Lower Ninth Ward is the history of community action and activism in the area. Due to the Ninth Ward’s geographic separation and working-class inhabitants, residents have developed a history of activism encouraged by seeming neglect by city officials. Civic groups established in the neighborhood fought diligently to obtain funds and services for the Lower Ninth Ward (GNOCDC, 2002). One of those first schools was McDonogh #19, now called Louis D. Armstrong Elementary, on St. Claude Avenue in the Lower Ninth Ward. As a result of the activism of residents (particularly from the Lower Ninth Ward) that emerged with the fight for civil rights, and the expertise of the NAACP legal team, the school desegregation movement marked New Orleans as the first deep-South school district to open its all-white doors to black children. This 1960 historical event spurred violent white protest and attracted media attention from around the world. After the crisis subsided, white Lower Ninth Warders began a decade-long exodus. The movement contributed to a post–World War II local suburban explosion (aided by the draining of former backswamps and the construction of the interstate highway system) and reflected urban residential patterns nationwide (Landphair, 2007).

In September 1965, New Orleans was hit by Hurricane Betsy. The storm surge overtopped the levees and crashed through levee breaches to drown the Lower Ninth Ward and St. Bernard Parish beneath six to twelve feet of water. The area was the scene of some of the most disastrous flooding in the city’s history (Kessler, 2012).
feet of water; the rest of the city remained relatively unscathed (Landphair, 2007). Hurricane Betsy was the catalyst that drove remaining whites, already inflamed by school integration, to St. Bernard Parish. The storm also came to symbolize long-standing municipal indifference to the Ninth Ward. In the decades following Hurricanes Betsy, New Orleans evolved into an African American city. As the neighborhood grew blacker, it got poorer. Consumer services followed whites out of the Lower Ninth Ward in search of suburban relocation. The port’s containerization wiped out well-paying jobs for thousands of blue-collar New Orleanians. Manufacturing jobs declined citywide (Campanella, 2006; Lewis, 2003). The neighborhood became famous for its crime rates and violence.

4.4.2. **Socio-Economic Characteristics**

Lower Ninth Ward civic activism continued into the twenty-first century. Residents joined existing or newly formed organizations to lobby for playgrounds, public school facilities, health clinics, and protection against environmental hazards (Landphair, 2007). Numerous neighborhood organizations including housing & community development corporations, churches, and other faith based congregation led initiatives flourished (Dessauer & Armstrong, 2006). The Lower Ninth Ward struggled with its reputation as portrayed in the media; the neighborhood became a synonym for black stereotypes.

Table 2.1 shows the pre-Katrina socio-economic census data of the Lower Ninth Ward, compared to the data for the New Orleans Parishes, the State of Louisiana and the United States.

<table>
<thead>
<tr>
<th>2000 Census</th>
<th>LNW</th>
<th>NOLA</th>
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<th>USA</th>
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<tbody>
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<td>Total Households</td>
<td>4.820</td>
<td>188.251</td>
<td>1,656,053</td>
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**Racial & Ethnic Diversity**

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<tr>
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<th>LNW</th>
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<th>USA</th>
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</thead>
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<td>32,3%</td>
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<tr>
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<td>3,1%</td>
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</tr>
<tr>
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<td>0,7%</td>
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<td>2,6%</td>
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**Household Income**

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<th>USA</th>
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<td>$43,176,00</td>
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<td>Social Security Income</td>
<td>35,8%</td>
<td>24,7%</td>
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<td>25,7%</td>
</tr>
<tr>
<td>Supplemental Security Income</td>
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<td>Public Assistance Income</td>
<td>8,3%</td>
<td>5,4%</td>
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<td>3,4%</td>
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**Housing**

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<td>Total Occupied Housing Units</td>
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<tr>
<td>Owner Occupied</td>
<td>59,0%</td>
<td>46,5%</td>
<td>67,9%</td>
<td>66,2%</td>
</tr>
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</table>

Table 2.1: *Census Data Comparison. (U.S. Census Bureau, 2012)*

The census data show that even though the Lower Ninth Ward appears to be a typical black, low income community, the percentage of owner occupied houses is relatively high. This is due to the Lower Ninth Ward being one of the first subdivisions that was designated for African Americans.
The level of political involvement by the residents, is probably related to the fact that it is an old neighborhood where people do have ownership of houses (GNOCDC, 2002).

“The idea was just so wonderful to be able to buy a lot for $250, to build a house and be a homeowner. When my family first came here, we cut a street, a path really, to get back to this lot. In the Ninth Ward, you’ve got a group of people who have stayed because we wanted to - because we’ve got an investment in this community.”

— 75 year old African American social worker (Fall 2003)

Recovery: October, 2005 - Today

After Katrina hit and the city was evacuated, the displaced residents of the Lower Ninth Ward found themselves in a difficult situation. In the beginning of the planning process, efforts to plan resulted in negative attitudes toward planning from the residents of the city. Rumors reached the evacuees that the City planned to demolish low lying neighborhoods and turn them into wetlands. This resulted in hastily returning residents, trying to reclaim their property before it was too late (see also section 1.1). In January 2006 the Bring New Orleans Back Commission put forward the first plans for rebuilding, confirming these fears. The BNOB plan left open the possibility that areas of the city would be abandoned, and residents inferred that its purpose was to rid the city of poor (and black) people (Olshansky & Johnson, 2010). This fostered suspicions that dogged efforts to plan for recovery.

Another element obstructing the recovery, was the financial burden on most evacuees. Following Hurricane Katrina local Gulf Coast officials said the "match" requirement in the Stafford Act - which said that affected communities had to pay a 25 percent match upfront before they can receive federal disaster fund - played a large role in the pace of recovery in the region (Evans, 2009). For most evacuees who managed to pay the match percentage, this was only the first of many obstacles to overcome. In New Orleans, planning for flood protection, infrastructure repair, economic redevelopment, and homeowner assistance was not coordinated. The state of Louisiana used the bulk of its federal recovery aid to assist homeowners to rebuild in the same place, despite the lack of adequate assurances that they would have flood protection or that the city would provide them with water, sewage, and other vital services. People in New Orleans referred to the resulting haphazard pattern of rebuilding as the “Jack O’Lantern Effect” — the darkness of abandoned houses and empty lots broken by lights from scattered beacons of restoration. Occupants did not know if their neighbors would return, if levees would be rebuilt, or if the city would provide transitional resources to sustain them (Nathan & Landy, 2009). Many evacuated home owners from the Lower Ninth Ward were unable to request recovery aid. Some struggled with the extremely elaborate and complicated application process, others were turned down due to clouded title issues; where a home owner is unable to prove he legally owns his property. An estimated 15% of the home owners who applied for federal housing assistance after Hurricane Katrina – approximately 20,000 homeowners - had clouded title, including many homeowners concentrated in the low-income neighborhoods like the Lower Ninth Ward (Way, 2009).

Recovery was going slow. Areas like the CBD and the French Quarter, who were less affected, recovered relatively fast. But neighborhoods like the Lower Ninth Ward are still in the recovery phase as of today. Table 2.2 shows a comparison of socio-economic census data of the Lower Ninth Ward, pre-Katrina and post-Katrina.

For the community of the Lower Ninth Ward, most of the elements of the post-disaster redevelopment plans are abstract and viewed as political promises. The original zoning ordinances for the Lower Ninth Ward, including recreational green spaces, are already up for alterations, favoring industrial zoning over the initially planned recreational space (information acquired from resident’s letters of objection, copies are held by the author, 2012).
### Table 2.2: Census Data Comparison. (U.S. Census Bureau, 2012)

<table>
<thead>
<tr>
<th></th>
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<th></th>
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<td>NOLA</td>
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<td>LNW</td>
<td>NOLA</td>
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<td><strong>Racial &amp; Ethnic Diversity</strong></td>
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<td></td>
</tr>
<tr>
<td>African American</td>
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<td>95,5%</td>
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<td></td>
</tr>
<tr>
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<tr>
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<td>Other</td>
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<td>1,2%</td>
<td>1,8%</td>
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<td><strong>Household Income</strong></td>
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<td></td>
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</tr>
<tr>
<td>Average Household Income</td>
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<td></td>
<td>$36,534,00*</td>
<td>$59,952,00</td>
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<tr>
<td>Wage or Salary</td>
<td>67,2%</td>
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<td>43,0%*</td>
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<td>Social Security Income</td>
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<td>49,6%*</td>
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<tr>
<td>Supplemental Security Income</td>
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<td>19,0%*</td>
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<tr>
<td>Public Assistance Income</td>
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<td>5,4%</td>
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<td>1,6%*</td>
<td>2,6%</td>
<td></td>
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<td><strong>Housing</strong></td>
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<td>Vacant Housing Units</td>
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<td>48%</td>
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<tr>
<td>Owner Occupied</td>
<td>59,0%</td>
<td>46,5%</td>
<td></td>
<td>66,4%</td>
<td>47,8%</td>
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</tr>
</tbody>
</table>

*extreme high margin of error

### Resident’s Financial Situation

The Lower Ninth Ward has a high rate of owner-occupied housing. But owners often did not have flood insurance or financial resources to rebuild on their own. This is a reflection of the financial characteristics of the demographics of the neighborhood.

### Renters

Rents in the hurricane-affected area have risen sharply — 25 percent or more in the hardest-hit areas — because units not damaged or destroyed by the hurricanes are now in short supply. Apartment shortages, combined with increasing insurance premiums for people who own buildings in areas hard-hit by Hurricane Katrina, have also created hardships with rents rising 20% or more in many cases (Brandon, 2006). Renters do not have any influence on whether or not their former homes are rebuild, leaving low-income renters with little options.

### Homeowners

Affected homeowners in New Orleans had the option to apply for the Road Home program. This program was announced in February 2006. The Road Home program was intended to provide Louisiana residents financial aid to rebuild or sell houses severely damaged by the storms, using grants to cover repair costs above what was covered by insurance policies and FEMA grants (Brandon, 2006). Like the Federal Emergency Management Agency (FEMA), Road Home has been the target of criticism.
Eligible applicants had a choice of three options:

- **Option 1: Stay**
  Homeowners that want to stay in their homes.

- **Option 2: Relocate**
  Homeowners that want to sell their homes but remain homeowners in Louisiana.

- **Option 3: Sell**
  Homeowners that want to sell their homes and either move out of Louisiana or remain in the State but as a renter.

Since the overarching purpose of the Road Home program was to restore Louisiana's impacted communities, the most comprehensive financial and technical assistance packages are made available to those pre-Katrina homeowners who made the effort and took the risks to move back and reoccupy housing in Louisiana (Option 1). Homeowners who owned their homes at the time of the storm may receive up to $150,000 as a compensation grant for hurricane damage to their home, without limitations with respect to income, and an additional compensation grant of up to $50,000 for homeowners whose household income is less than or equal to 80 percent of median income for the affected area. A third component was available if a homeowner agrees to elevation and mitigation that will harden the home in future events.

Money granted to home-owners was based on pre-Katrina property value, and property values in the Lower Ninth Ward were already below rebuilding costs. Therefore, the Road Home options were financially insufficient for almost every resident of the Lower Ninth Ward.

### 4.5 Conclusions

The effects of hurricane Katrina on New Orleans are immense. The changes in government structure inherent to emergency disaster obstructed the generic approach to urban area development as used by the local government.

The timeline of the response phase in New Orleans further shows the local, federal, and national inadequacy. Ultimately, many New Orleanians end up in a situation worse than before Katrina; unable to get back to the status quo.

The Lower Ninth Ward is a neighborhood where the impaired circumstances are the most evident in the entire city. The effects of Katrina are stacked upon long-term issues regarding the social and economic situation of the residents.

Overall, the Lower Ninth Ward neighborhood is unable to enter the city-wide redevelopment process, but is in dire need to do so. The next steps in this research aims at offering a starting point for residents to work towards a consensus with the local government, in order to enter the redevelopment process.
5 Perspectives
5.1 Introduction

A long history of disputes due to various circumstances has been influencing the relation between residents from the Lower Ninth Ward and the city government long before Katrina hit New Orleans. Lingering conflicts, aggravated by new arguments caused by the redevelopment process, resulted in a moral breakdown in the community (see also: section 1.2, p. 15-16). Emotions on both sides invaded the dialogue about the process of recovery. According to the literature review, any recovery process benefits from extensive community participation. Both residents and city planners agree on the importance of participatory development, and there are plenty examples of successful participation present throughout the United States as well as in other post-disaster situations across the world. Still, the reality of the Lower Ninth Ward does not show any signs of progress in participatory development, and the neighborhood is experiencing a severe lag in recovery, compared to the rest of the city.

The discussion on involving residents in the redevelopment process is characterized by a generalized view on participatory development. Policy documents are set up in a abstract, generic manner. Criticism from the community addresses government plans with a general tone of disagreement. Stakeholders would benefit more from a project-based discourse approach. First of all, because it will help translate the general feeling of discontent to specific, measurable variables. Secondly, because the heterogeneity character of urban areas and post-disaster redevelopments benefit from a tailored approach as opposed to using a city-wide blueprint. Finally, because the usefulness, feasibility, and desireability of participation as a means in redevelopments needs to be tested on a project basis.

This research focuses on the variables as identified from two different perspectives: top-down and bottom-up; city planners & policy makers, and local residents. These perspectives, embodied by two panels of stakeholders, correspond with the extremes on the spectrum of participatory development (figure 5.1). The variables obtained by this approach are analyzed, combined, and converted to output able to fit the subsequent steps in this research; round two of the Delphi method and the field research.

![Fig. 5.1: Spectrum of Participatory Development](image-url)
The design of the Delphi method as modified and applied in this research is explained in section 5.2.

An open first round enables panelists to state their perspective and makes it possible to turn the perspectives of two panels into measurable variables. The result is two separate lists, one based on local knowledge and one based on planning & policy making expertise. These lists are combined in order to use them in round 2.

The second round investigates the views of the panels on participatory development. This is not done by addressing participation as an abstract generalization, but by analyzing perspectives on a project-based scale, by means of a ranking procedure aimed at specific variables. The combined list resulting from the first round and the spectrum of participatory development are used in the second round.
5.2 Delphi Design

The general characteristics of the Delphi method have been explained in chapter 3. This section sets out the specific design as applied in the case study.

5.2.1. The Design

The procedure of executing the Delphi method is shown in figure 5.2. In this design, no structured first round is used, thus anticipating the issue of predetermination as described in the first pitfall of Delphi designs.

The first round aims at identifying variables which are necessary to bridge the gap between the current state of affairs and the completion of the recovery phase. Because this round is conducted among two panels, the results are initially presented as two separate lists. Two lists will enable variable identification from two different perspectives; allow analysis of similarities and differences between said perspectives; and finally provide a combined list that is richer of information than any list from a single perspective, preventing bias in the continuance of the research.

The second round is actually a combination of two more rounds, conducted in one session. Each panelist from both panels is provided with the same combined list that resulted from round 1. In part I of round 2, the spectrum of participatory development (section 2.2.3) is introduced. The utility of the spectrum and the definition of each level are explained. Panelists are then asked for each variable to rank it on the spectrum of participatory development according to what they believe is the most appropriate level of participation. A more detailed explanation for ambiguous variables is provided. Panelists are encouraged to provide a substantiation for their ranking. After completing the ranking procedure, panelists are also asked to comment the selection of variables on the combined list, and whether they would like to add a new variable after reviewing and contemplating said list.

---

**Round 1: Identifying variables**

**Question:** Panelists are asked to name factors that are necessary for the recovery of the Lower Ninth Ward.

"Can you list factors, whether they are social; economic; or physical - or of any nature you can think of - that in your opinion could help the Lower Ninth Ward recover, but are currently insufficiently present or not present at all?"

**Set-up:** Non-structured.
**Panels:** Participants are treated as individuals.
**Data processing:** After collection of the data, duplicates are eliminated and similar variables are given one generic label.

---

**Round 2, Part I: Ranking variables**

**Question:** Panelists are asked to rank the list of variables derived from round 1 on the spectrum of participatory development.

"Please select the level which you think would be most appropriate for a local project for [variable x]."

**Set-up:** Structured, use of online questionnaire (see appendix B).
**Panels:** Two panels are treated as two separate groups.
**Data processing:** After collection of the data, calculate mean rank for each item. Assess consensus for each list within each panel using Kendall’s W.
In part II of round 2, the panelists are asked to provide project suggestions for each variable within the approach they just selected from the spectrum of participation.

A feedback structure is incorporated. The concern of specific knowledge of panelists is addressed in section 5.2.2. The design has been tested on students in the field of architecture and non-students with no relation to the topic. Following these tests, the decision is made to add one more step to the second round: optional feedback through telephone or e-mail contact if any specific substantiations give rise to a need for further explanation.

5.2.2. The Panels

The set up of the two panels used in this case study is derived from the two main stakeholder types on the extremes of the spectrum of participatory development. The members of each panel are selected based on panel-specific criteria.

Resident Panel

After consultation with experts in the field of population analysis and local community representatives, criteria for the panel of residents are formulated. The panel should consist of home-owners and renters, relatively proportioned according to current local demographics. This resulted in a panel composition of 11 panelists, of whom 7 are home-owners and 4 are renting property.

On the matter of panelist expertise; the first question asked concerns the perspective of panelists on what they believe is necessary to improve the recovery process of the Lower Ninth Ward. Regarding the expertise of community panelists, local knowledge is essential. Therefore, the participants in the community panel are qualified to answer the first question. The second question asks them to rank variables on the spectrum of participatory development according to their point of view. It is necessary to explain the spectrum clearly and show the spectrum in a way that it is comprehensible for panelists with no experience in government-civil relationships. This is validated beforehand using a test panel of people with a similar background.

City Government Panel

The city government panel consists of 10 participants who are or have been involved in planning and policy making for the redevelopment of the Lower Ninth Ward. Selection is based on two criteria: whether the participant has worked for the city government in the redevelopment after Katrina, and whether the participant has work-related knowledge of the Lower Ninth Ward. The composition of this panel includes members from the City Planning Commission, members from the Neighborhood Engagement Office, and local researchers committed to the field of urban planning.

For the first round, the two panels are offered the same interview question, but in order to analyze differences in perspective, the initial lists of results are set up for each panel separately.

In both parts of the second round, the resident panel & the city government panel are foremost seen as a whole. By doing so, the benchmark of the panel size for the calculations is guaranteed. Separate panel results are still provided, in order to enable a thorough evaluation of the differences in results.
5.2.3. **Analysis and Results of the First Round**

The interviews conducted are used to identify variables in an exploratory manner. Due to the number of interviews and the importance of analyzing them in a scientific and strategic manner, the Atlas.ti software has been selected as the method of choice. Through an exploratory, yet systematic approach to data (as opposed to a mere "bureaucratic" handling), it is assumed that especially constructive activities like theory building will be of great benefit. The entire program’s concept, including the process of getting acquainted with its particular idiosyncrasies, is particularly conductive to an exploratory, discovery oriented approach (Friese, 2013).

5.2.4. **Analysis and Results of the Second Round, Part I**

Before the panel was interviewed in the second round, the required degree of consensus for the ranking to be credible was defined. To ascertain the collective opinion, descriptive and inferential statistics were used. This also means that for some variables, the conclusion could be drawn that there is no measured consensus.

The consensus of the panel can be described by the Kendall's W or Kendall coefficient of concordance, which measures the degree of association among \( k \) sets of rankings. It can be used to assess consensus amongst panelists. In this study the degree of association among the rankings of each variable on the spectrum of participatory development of the experts within both panels & between the two panels is measured.

Kendall’s W has a value between 0 and 1. According to Schmidt (1997), as a rule of thumb, a Kendall’s W of 0.7 or higher can be interpreted as ‘strong agreement’ or as high confidence in ranks.

<table>
<thead>
<tr>
<th>Kendall’s W</th>
<th>Interpretation</th>
<th>Confidence in Ranks</th>
</tr>
</thead>
<tbody>
<tr>
<td>.10</td>
<td>Very week agreement</td>
<td>None</td>
</tr>
<tr>
<td>.30</td>
<td>Weak agreement</td>
<td>Low</td>
</tr>
<tr>
<td>.50</td>
<td>Moderate agreement</td>
<td>Fair</td>
</tr>
<tr>
<td>.70</td>
<td>Strong agreement</td>
<td>High</td>
</tr>
<tr>
<td>.90</td>
<td>Unusually strong agreement</td>
<td>Very high</td>
</tr>
<tr>
<td>W = 1</td>
<td>Complete agreement</td>
<td>Very high</td>
</tr>
</tbody>
</table>

*Interpretation of the Kendall coefficient of concordance W (Schmidt, 1997)*

In the second round, each panelist assigned a level of participation to each of the variables. For the sake of data analysis, the different levels are ranked 1 to 5, where 1 corresponds to the ‘Inform’ level, and 5 corresponds to the ‘Empower’ level.

<table>
<thead>
<tr>
<th>Inform</th>
<th>Consult</th>
<th>Involve</th>
<th>Collaborate</th>
<th>Empower</th>
</tr>
</thead>
<tbody>
<tr>
<td>Government decides and informs residents about their decision.</td>
<td>Government decides, but gives residents a chance to voice their opinion.</td>
<td>Government and residents make plans together, the government executes the plans.</td>
<td>Government and residents collaborate in planning and execution.</td>
<td>Residents decide and execute plans, government supports if necessary.</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

*Fig. 5.22: Simplified Spectrum of Participation as used in the Online Questionnaire.*
For each variable, the mean can then be calculated and used for the calculation of the coefficient of concordance:

\[ W = \frac{12 \sum_{i=1}^{n} (R_i^2) - 3m^2n(n+1)^2}{m^2n(n^2-1) - m \sum_{j=1}^{m} (T_j)} \]

Where:
- \( W \) = coefficient of concordance
- \( n \) = total variables
- \( m \) = total panelists
- \( i \) = variable \( i \)
- \( j \) = panelist \( j \)
- \( R_i \) = sum of the ranks for variable \( i \)

And:

\[ \sum_{j=1}^{m} T_j \]

calculates the correction factor for ties.

5.2.5. Analysis and Results of the Second Round, Part II

In part II of the second round, panelists provide project suggestions for each variable within their preferred approach selected from the spectrum of participation.

For each variable, a selection is made from all suggested projects. This selection is based on whether or not the possibility exist to execute the suggested project within the predominantly selected approaches. When there is clearly no support for a specific level of participation, all project suggestions for the variable that can only be executed by using that approach are discarded. Project suggestions are deemed to be a fit when:

- They are executable within the preferred levels of participation
- They are referring to a project clearly related to the variable
- They are free of obvious unrealistic elements.

With these criteria in mind, the results of round 2, part II are explained, analyzed, and evaluated in order to provide an overview of realistic and appropriate recovery opportunities.
5.3 **Round 1**
In order to analyze the perspectives of top-down stakeholders and local residents, the first round of the Delphi research is used.

5.3.1. **Analyzing & Coding the Interview Transcripts Using Atlas.ti**
The "Hermeneutic Unit" (HU) of this Atlas.ti project starts out with containing two primary documents. Due to software restrictions in the Atlas.ti version used, the original number of 21 primary documents has been manually comprised into two workable primary documents instead of being filtered by the family function. The original primary document families were “Government Panel” and “Resident Panel”, corresponding to the two panels of interviewees. The two new bundled primary documents are named after the initially planned families.

These two primary documents are both assigned to their own corresponding family, in which they are the sole object. This is done purely for query functionality.

The first step in using the Atlas.ti software is to select quotations that contain answers to the research question and assign appropriate codes. In-vivo coding has not been used due to the repetitive nature of the interview question-and-answer structure. For now, each primary document is treated as an independent entity and codes are not yet synchronized. The resulting set of codes is shown in figure 5.4.
The goal is to end up with a list of codes that can be used in subsequent research steps for both panels. It is therefore necessary to synchronize codes across primary documents. This is done by checking which codes are used similarly in both documents, which codes can be merged, and which codes that stand alone can or cannot be discarded. In order to check the presence of codes across primary documents, the Codes-Primary Documents Cross-Tabulation option is used; figure 5.5 shows the output.

The following table shows the combined and unified results of the first Delphi round conducted among the government panel on the left, and the results from the resident panel on the right. These variables are the result of a thorough and careful analysis of the collected data, using the information from the case study to eliminate irrelevant and insignificant output.

![Codes-Primary Documents Cross-Tabulation Results](image)

Fig. 5.5: Codes-Primary Documents Cross-Tabulation Results

<table>
<thead>
<tr>
<th>Variables Government Panel</th>
<th>Variables Resident Panel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td>Population</td>
</tr>
<tr>
<td>Information Accessibility</td>
<td>Information Accessibility</td>
</tr>
<tr>
<td>Quality of Neighborhood Organization</td>
<td>Quality of Neighborhood Organization</td>
</tr>
<tr>
<td>Retail</td>
<td>Retail</td>
</tr>
<tr>
<td>Infrastructure</td>
<td>Infrastructure</td>
</tr>
<tr>
<td>Technology and Resources of Residents</td>
<td>Building Equipment</td>
</tr>
<tr>
<td>Neighborhood Image</td>
<td>Environment</td>
</tr>
<tr>
<td>Historic Capital Restoration</td>
<td>Senior Housing</td>
</tr>
<tr>
<td>Social Capital</td>
<td>Social Housing</td>
</tr>
<tr>
<td>Sustainability</td>
<td>Sustainability</td>
</tr>
<tr>
<td>City Budgeting</td>
<td>City Budgeting</td>
</tr>
</tbody>
</table>
The following codes are present in both primary documents:

- “Information Accessibility”
- “Infrastructure”
- “Population”
- “Quality of Neighborhood Organization”
- “Retail”

The following codes are suitable for merging:

- “Technology & Resources of Residents” AND “Social Capital” AND “Building Equipment”
  "Social Capital” is defined by the interviewees as the ability to generate valuable output through human interactions. The resident panel indicated that “Building Equipment” will lead to material output. Both “Social Capital” and “Building Equipment” require skills and tools. This is why these two codes are merged with “Technology & Resources of Residents”, which entails any tool or ability to generate valuable output in the recovery process.

- “Environment” AND “Neighborhood Image” AND “Historic Capital Restoration”
  Interviewees see “Historic Capital Restoration” as a way to improve the “Neighborhood Image”, without directly linking it to any other variable. “Historic Capital Restoration will therefore be seen as a part of the “Neighborhood Image”. The “Neighborhood Image” as defined by interviewees is mostly determined by the aspects as listed under the “Environment” code. It is important to keep in mind that this merger is based on the perspectives of the interviewees, and that the definition of “Neighborhood Image” can take on a more metaphysical form in other sources.

- “Senior Housing” AND “Social Housing”
  Interviewees who mention “Senior Housing” indicate that this is a part of “Social Housing”. For this reason both codes will be merged into “Affordable Housing”, a more common expression in Louisiana.

The following codes are unsuitable for merging and will be removed:

- “City Budgeting”
  Combining the interviews, fieldwork and document reviews in an iterative process has resulted in the knowledge that city budgeting is not a variable that is open for change on a local level. City budgeting is mainly regulated through state laws. Even though a change in city budgeting policy might seem a possible solution according to a number of residents, in reality this is not a factor where either of the stakeholders have enough influence to make that change. Since the scope of this research is limited to the relationship between city government and residents, the variable “City Budgeting” is discarded.

- “Recovery”
  “Recovery” will be used as an umbrella variable, but recovery itself is obviously not a variable that contributes to recovery. For this reason, “Recovery” will be removed from the list of codes.

The following codes are only present in a single primary document, are unsuitable for merging, but will be kept:

- “Sustainability”
  After careful consideration, the variable “Sustainability” is deemed to be of such great importance to the residents (mentioned just as much as “Environment” and both housing variables) that keeping it is regarded appropriate.

The review of the codes used leads to a new set of codes, where some are eliminated and others are merged. This list is shown below in figure 5.6, sorted by frequency of appearance.
All codes in figure 5.6 are used as variables in the second round of the Delphi method. Before moving forward, it is important to define and evaluate the results.

Fig. 5.6: Final set of variables.
5.3.2. Analysis and Evaluation of the Variables

The nine different codes are defined by combining information derived from literature, the case study, and the interviews. By utilizing the memo function and categorizing memos in two different families (internal & external memos), the difference between comments regarding the variables and comments regarding the case study can be easily seen. The external memos, referencing quotations and thoughts for later use in the research, have been set apart and exported to a separate document.

Now, each of the variables is defined using the network view option, specific queries, and supplementary sources. The variables are presented in order of code frequency.

Population

The variable ‘Population’ is listed unanimously by all resident panelists, and by 8 out of 10 government panelists. According to the interviewees, recovery progress is highly dependent on whether or not a large portion of the original population returns. This is therefore a variable of return-rate, not numbers. To illustrate this variable, figure 5.7 shows the return-rate per neighborhood. The population loss in the Lower Ninth Ward is among the highest of New Orleans. As shown in chapter 4, the actual percentage of the original population that has returned currently lies around 20 percent. This puts the Lower Ninth Ward at the bottom of the list of return-rate per neighborhood (GNOCDC, 2012).

![Fig. 5.7: Percent Change in Population (GNOCDC, 2012)]

To understand how panelists relate “Population” to other variables, different tools within Atlas.ti can be used. The co-occurrence of “Population” and all other variables is shown in figure 5.8; the frequencies of co-occurrence are visualized in a matrix.
The first number in the green fields indicates how often "Population" co-occurs with the other variables. The second number is a coefficient, irrelevant to this research due to the limited number of interviews. Lighter green fields point out that the co-occurrence frequency is higher than in darker green fields. First notable observation is that none of the interviewees links "Population" to "Sustainability". This means that no panelist expresses either of the variables to influence the other. Increase of population will, in their perspectives, not lead to improvements in sustainability and vice versa.

The three variables with the highest co-occurrence regarding "Population" are "Environment", "Retail", and "Technology & Resources of Residents". Because the co-occurrence table looks at how often codes are mentioned in each other's vicinity, the nature of the links between them is still unclear. Other tools can be used to evaluate inter-code relationships. Figure 5.9 shows the first part of the analysis process visualized with the network view option: "Population" and the three codes with the highest co-occurrence frequency; common quotations; and related memos are displayed alongside.

Fig. 5.8: Co-occurrence of the variable "Population".

Fig. 5.9: Network view of the "Population" variable and its three most co-occurring codes, quotations, and memos.
The next step in the Atlas.ti analysis is to determine the relationships between codes, using the displayed quotations and memos. Editing the node links results in the relationship as depicted in figure 5.10. When the majority of interviewees explicitly mention one variable as a cause of a second variable, the inter-code relationship is labeled as such. When panelists acknowledge a relationship between variables, but fail to provide a clear explanation of its nature, the label "is associated with" is selected.

It is apparent that half of the relationships are two-way cause-and-effect. This means that a community can rapidly get caught in a vicious cycle, as seen in the Lower Ninth Ward; the decrease of population leads to a low quality environment, and the low quality environment contributes to the decrease of population.
City government panelists mention how residents in the Lower Ninth Ward lack the technology and other resources to recover on their own. Some communities who did have the money and means to pick up projects, sped up their local recovery process by single-handedly kick-starting programs to assess damage, categorize local property, and initiating clean-up and rebuild projects. By taking over tasks which should normally be picked up by the local government, neighborhoods can accelerate the recovery process. Residents in the Lower Ninth Ward lack the technology and resources which were used by other neighborhoods to get such a lead.

The government panel mainly emphasizes the need for **social capital**. Some neighborhoods are more capable of establishing and using connections within their community & with outside actors than other neighborhoods. For example, the Broadmoor community managed to network for help from universities like MIT. This possibility to set up and use networks is known as social capital. The government panel indicates that an improvement of social capital would lead to more help from outside stakeholders for setting up projects.

Members of the resident panel express the need for equipment and materials, and focus less on social capital. They view the process of recovery as one of small projects, lot by lot. They express that there is no lack of projects started, but that insufficient construction equipment and a shortage of building materials is heavily influencing the speed of recovery. From their perspective, the lack of large machinery and the materials is slowing down those small-scaled projects.

"When you lost everything and you have to start over... start rebuilding, even a box of nails can be too expensive. But the things people are missing most are the bigger tools. You know; bobcats, cement mixers, ladders and scaffolding... Recovery is slow when you have to mix your concrete by hand. Sometimes it's just as simple as that."

- Resident Panelist

After a litany of bad experiences with contractors, residents have resided to rebuilding with the use of small local NGO's or with help from neighbors. Both forms of assistance in general do not have the means to provide neither materials nor appropriate equipment. It is frustrating to see well-trained volunteers spend the afternoon straightening old nails for re-use, when those hours could be spent on actual rebuilding.

The theoretical framework states that both social capital and tangible resources are essential in the recovery phase (see section 2.2.2, p. 28). The case study validates this statement; a lack of
social capital made the community of Lower Ninth Ward an easy prey for malevolent contractors. A lack of tangible resources leads to inefficient use of the small amount of outside help the residents do manage to attract. Both panels seem to underestimate either one of these aspects.

*Retail*
Retail is defined as the sale of goods to the public, both food and non-food. Looking at the co-occurrence table (figure 5.12), it is apparent that none of the interviewees links “Retail” to “Technology & Resources of Residents” or “Information Accessibility”. The “Retail” variable is highly related to “Population”, “Environment”, and “Infrastructure”.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Retail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td>7 - 0.14</td>
</tr>
<tr>
<td>Technology &amp; Resources of Residents</td>
<td>n/a</td>
</tr>
<tr>
<td>Quality of Neighborhood Organization</td>
<td>5 - 0.02</td>
</tr>
<tr>
<td>Environment</td>
<td>7 - 0.19</td>
</tr>
<tr>
<td>Infrastructure</td>
<td>5 - 0.14</td>
</tr>
<tr>
<td>Information Accessibility</td>
<td>n/a</td>
</tr>
<tr>
<td>Sustainability</td>
<td>4 - 0.15</td>
</tr>
<tr>
<td>Affordable Housing</td>
<td>2 - 0.07</td>
</tr>
</tbody>
</table>

*Fig. 5.12: The frequency of code co-occurrence of Retail and the other variables.*

Although retail is viewed by both panels as an essential contributor to the recovery, it is also acknowledged that its influence is limited to only certain elements important to recovery. Its importance is stated by the strong relation it has with both “Population” and “Environment”, two variables which are named as the most important aspects of recovery by a number of panelists.

*Quality of Neighborhood Organization*
Both panels indicate that a good quality neighborhood organization is a catalyst for post-disaster recovery. According to the interviewees, the nature of the pre-existing organization of the community directly influences the progress in recovery. There is a plethora of neighborhood organizations in New Orleans ranging from high quality to very weak. Some neighborhoods already had good organizations; these are mainly the wealthier neighborhoods, like Broadmoor and Oak Park. Others have a weak organization or still don’t have one at all. The Lower Ninth Ward has no functional neighborhood organization. There is a neighborhood council, described by one panelist & council member as “a bucket of crawfish; when one tries to climb out of the mess, the others pull him back down”. This organization is labeled by most panelists as dysfunctional and insignificant. The only other collective in the Lower Ninth Ward is the home-owner organization, which focuses on providing home-owners with legal advice. Various small grass-root organizations exist, but all of them are single cause focused. There is no coordinating body.

The benefits of having a good quality neighborhood organization are versatile. Most residents need help in order to understand how the system works. With the assistance of a well-informed local organization, numerous hurdles and dead-ends in the recovery process can be avoided or anticipated. Some organizations have in-house professional planners to assist local projects or to offer alternative designs for private & public projects when residents disagree with the top-down plans. In-house capacity building is another service offered by some neighborhood organizations. There are mentions of neighborhood organizations who kick-started the response phase before the city government even started the clean-up. Both panels indicated that the quality of
neighborhood organization in the Lower Ninth Ward needs to improve drastically in order to support the recovery process.

Infrastructure

"When you have an area where a lot of people don’t have the resources to rebuild, then the city doesn’t want to put a lot of money into the infrastructure." This quote from one of the city government panelists describes the vicious cycle regarding infrastructure in the Lower Ninth Ward.

The network view of “Infrastructure” (figure 5.13) reveals that the influence on other variables as attributed by the panels is substantially different. The higher number of related codes, comments, and memos originating from the resident interviews as compared to the output from the government interviews highlights the different perspectives. Government interviewees acknowledge the importance of infrastructure, but only link its influence to “Population” and “Environment”. The members of city government panel who mentioned infrastructure as a variable in need of improvement related ‘infrastructure’ mainly to the conditions of roads. Not only do they express the need for repair work to accommodate car traffic, they also would like to see bicycle routes connecting the Lower Ninth Ward to the city center.

Residents link “Infrastructure” to three additional variables: “Retail”, “Information Accessibility”, and “Sustainability”. Residents appear to have a much broader perspective on the importance and definition of “Infrastructure”. The resident panel too pointed out the bad condition of most roads in the Lower Ninth Ward, but emphasized the importance of good public transportation. Before Katrina, the accessibility of the Lower Ninth Ward was guaranteed by five bus lines. Looking further back at the history of the neighborhood, it even used to be connected to the city center by a streetcar. Now, only two bus lines remain. Bus stops are scarce and hardly visible; most bus stop signs were damaged or simply washed away by the storm surge.

“Unfortunately, what happens is a mindset that says, if I had it before Katrina I should have it again,” according to New Orleans Regional Transit Authority CEO Justin Augustine (Cohen, 2011). As the theoretical framework points out, the goal of every post-disaster recovery program should be exactly that: returning every facet of an affected community and the elements of its environment, as early as possible to original levels (status quo).

Combining the perspectives of both panels and supplementary information from the case study, the variable “Infrastructure” is defined as all means of mobility and supporting operational structures; including roads, public transportation, bicycle structures, pedestrian structures.
Environment

The resident panel is very outspoken about the current state of the public space in the Lower Ninth Ward and the effect it has on the neighborhood image. The three main complaints regarding the environment from community members are illegal dump sites created by both residents and offenders from other parts of the city; the persistent issue of make-shift graves; and the wild dogs who roam the northern streets of the neighborhood.

These are just a few of the issues tainting the environment. The residents express discontent with the city government regarding these problems. They see it as the city’s task to maintain the public space and create a safe physical environment.

The city government panel agrees that the poor neighborhood image negatively affects the recovery process, but most panelists relate the overall image to crime rates and blight; from their perspective all factors caused by the residents. Looking at the variables linked to “Environment”
and their relations, there are two different types of links that can be found. On the left side of figure 5.16, four variables are associated with “Environment”. This means that both linked variables influence each other; for example, improving the environment will attract more retail, and increasing the retail supply will improve the environment. On the right side of figure 5.17, two variables with a different relation to “Environment” are displayed. According to the panelists both “Infrastructure” and “Sustainability” influence the environment, but any improvements of the environment will not trigger a change in “Infrastructure” or “Sustainability”. The variable “Environment” is defined by panelists as the neighborhood image and the quality of public space.

![Network view of the variable “Environment” and the nature of its relations.](image)

**Information Accessibility**

According to government panelists, communities feel like they don’t get informed about projects in their neighborhood until after it’s too late for them to get involved or object the decisions made. This was galvanized by the Katrina experience where the whole city was building and rebuilding in a rapid pace. Local government got notice of the need that the current way of handling information should be systematized into an earlier and more influential process for neighborhood residents and for organizations to be able to influence the projects. Government panelists also acknowledged how some neighborhoods seemed to find their way through the bureaucratic procedures easier than others. As one government panelist mentioned:

“Most of the information is public, but it might be a little hard to find sometimes. But I think some aspects of information accessibility have recently been improved, like our website. You can now view agendas online, and other things.”

Both panels generally see the issue of information from the same perspective. Every participant of this research defines the problem with information as a one-way problem: the residents need more information from the government. Only one government interviewee mentioned that it would be helpful if they would have more access to information from neighborhood organizations; no other panelist mentions anything about information coming from residents to assist the government. According to the theoretical framework, both authors of journal articles about urban practices and post-disaster redevelopment underline the value and necessity of information from local stakeholders. Looking at the evolution of participation theory (figure 2.3 – page 35), the inclusion of consultation has been present since the 1960’s.
In addition, the issue of bodged consultation throughout the redevelopment process has been identified by both stakeholders (City of New Orleans, 2010). The reasons behind the absence of the flipside of the information coin in the interviews are indistinct. The lack of confidence among the stakeholders may have led to this result; where it is the implicit duty of a city government to inform its residents of its actions, the process of directing information from the population to the city government is a rare and often unfamiliar path for residents. So when issues regarding the flow of information arise, the obvious target of critique is the stakeholder who is primarily responsible for the process regarding the subject of information deficiency. Albeit the majority of interviewees define information accessibility as a one-way process, the definition resulting from evaluating the interviews using literature does include the accessibility of neighborhood information as well.

**Sustainability**

It is important to use the Atlas.ti analysis tools to define the variable “Sustainability”, because its conception as commonly known through literature and media can be very different from the perspectives of the interviewees. Figure 5.18 depicts the quotations, codes, and memos related to “Sustainability” as a result from the interviews.

What stands out here is that sustainability is not merely related to evident variables like “Environment” and “Retail” as one would expect inferred by contemporary literature. The influence of sustainable measures, as remarked by the panelists, transcends that notion and two related variables are additionally disclosed in figure 5.18. According to the interviewees, the variables “Information Accessibility” and “Technology & Resources of Residents” are also linked to “Sustainability”. The most noteworthy absentee in the conception of sustainability amongst interviewees is “Affordable Housing”. Sustainability as defined by panelists includes sustainable methods of acquiring food, energy, and other goods. Recurring examples given by panelists cover solar panels and urban farming. Figure 5.19 visualizes the nature of the relations within the network view of “Sustainability” in order to show the influence of “Sustainability” on other variables.

![Fig. 5.18: Network view of the variable “Sustainability”](image-url)
According to the panelists, improving the accessibility of information will lead to an increase of sustainability measures. Subsequently, sustainability measures will cause improvements for both “Environment” and “Technology & Resources of Residents”. The variable “Retail” has a strong relationship with sustainability, because interviewees consider both of them to have a major focus on food.

**Affordable Housing**

The variable “Affordable Housing” includes social housing and senior housing, regardless of whether it is available for sale or rent. Figure 5.20 visualizes the relations between “Affordable Housing” and other variables. The causal variable “Information Accessibility” in this case refers to the flow of information from the neighborhood to the local government; interviewees indicate that a better informed government regarding the housing demand in the Lower Ninth Ward would cause an increase of affordable housing.

The link between “Affordable Housing” and “Environment” is labeled as a contradiction. This notion is based on interviews with the government panel. In their perspective, affordable housing can attract poverty and thus harm the image of the neighborhood. However, when looking at the...
link between “Affordable Housing” and “Environment” through the node of “Population”, the perspective of resident panelists becomes apparent and indicates that affordable housing will have a positive effect on the environment through the increase of population. The common element as mentioned in the link between “Affordable Housing” and “Infrastructure” refers to the lack of facilitation for the elderly and disabled (e.g. wheelchair accessibility). Both the current state of infrastructure and available homes do not support this part of the population.

Network View of all Variables
Now that every variable is analyzed and evaluated using Atlas.ti and supplementary literature, the relations between them can be summarized with the network view option. Figure 5.21 depicts the nature of the links between the variables.

![Diagram of network view of all variables](image)

Fig. 5.21: Nature of relations between all identified variables.

Even though every variable can be identified and conceptualized individually, it is of the utmost importance to keep in mind that they are all interrelated. The links and their nature as shown in figure 5.21 will influence the advancement of the thesis research and the final conclusions.
5.3.3. **In-depth Analysis of Similarities and Differences in Perspective**

There are some notable similarities between the two lists. The following table shows variables which are recurring in both the government panel and the resident panel.

### SIMILARITIES

<table>
<thead>
<tr>
<th>Variables Residents</th>
<th>Variables Government</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td>Population</td>
</tr>
<tr>
<td>Information Availability</td>
<td>Information Availability</td>
</tr>
<tr>
<td>Infrastructure</td>
<td>Infrastructure</td>
</tr>
<tr>
<td>Retail</td>
<td>Retail</td>
</tr>
<tr>
<td>Quality of Neighborhood Organization</td>
<td>Quality of Neighborhood Organization</td>
</tr>
</tbody>
</table>

Both panels agree that an increase of population would automatically improve the recovery process.

Information availability and information access are considered similar variables. It is important to note that the resident panel showed expectations of improvement on how the government provides information, where the government panel showed expectations of improvement from residents concerning their capabilities of accessing government information.

Both panels agree that improving infrastructure, regarding public transportation and road quality, is necessary for the recovery of the Lower Ninth Ward.

Both panels agree that the retail supply in the Lower Ninth Ward is too limited, and that the community would benefit from a larger and more heterogeneous supply. Residents stressed the importance of fresh food and small, local businesses. Government panelists emphasized the economic and financial importance of residents with own businesses.

Especially noteworthy is the fact that both panels agree that the quality of neighborhood organization needs to be improved in order to move forward in the recovery process. Almost every panelist, regardless of which panel they are on, states that a lack of organization in the Lower Ninth Ward is obstructing the progress of the community.

Variables which are recurring in only one of the two panels, and did not appear on the list of the other panel, are shown in the table below.

### DIFFERENCES

<table>
<thead>
<tr>
<th>Variables Residents</th>
<th>Variables Government</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environment</td>
<td>Improvement of Resident’s Financial Situation</td>
</tr>
<tr>
<td>Building Equipment</td>
<td>Historic Capital Restoration</td>
</tr>
<tr>
<td>Fresh Food</td>
<td>Neighborhood Image</td>
</tr>
<tr>
<td>Senior Housing</td>
<td>Technology and Resources of Residents</td>
</tr>
<tr>
<td>Social Housing</td>
<td>Social Capital</td>
</tr>
<tr>
<td>Sustainability</td>
<td></td>
</tr>
</tbody>
</table>

The differences between the variables provided by the panels can be designated as a difference between a focus on local scale versus a focus on a larger scale. Residents tend to list variables of a small-sized, local, and practical nature. They would address a lack of specified housing (senior, social) instead of mentioning housing as an umbrella variable. Government panelists tend to list umbrella variables rather than specifying their input.
For example, the government panel unanimously agreed that an improvement of the financial situation of residents is necessary for the neighborhood to recover. Only one out of the 11 resident panelists mentioned finances, and only addressed them in terms of city budgeting. Residents implicitly indicate their financial situation, but see it as a side effect of variables such as sustainability. The resident panel almost unanimously mentioned solar panels as a beneficial factor in the recovery process and agreed that an increase of sustainability measures would benefit individuals and the neighborhood as a whole.

One exception regarding the overall difference between umbrella variables named by government panelists and local, practical variables named by residents, can be seen in the variables ‘Historic Capital Restoration’ (government) and ‘Environment’ (residents). Here, residents tend to use an umbrella variable to address a range of elements they feel need to be dealt with or improved, where the government focuses on one specific type of environment improvement. It must be remarked that different government panelists bare different definitions of historic capital; most panelists view it as a purely architectural variable, where others mentioned historic capital in a more abstract and broader sense.
5.3.4. Conclusion

In order to analyze and evaluate the first round of the Delphi method, the choice was made to use the Atlas.ti software.

The goal of the first round is to identify families of factors, which can then be used as variables in the other two steps of the Delphi method. The results provide an identification of factors that could help the Lower Ninth Ward recover, but are currently insufficiently present or not present at all (according to the interviewees).

The research question related to the first round of Delphi as posed in chapter 3 and used in the interviews is:

*Can you list factors, whether they are social; economic; or physical ‐ or of any nature you can think of ‐ that in your opinion could help the Lower Ninth Ward recover, but are currently insufficiently present or not present at all?*

Interviewees identified a variety of factors, which have led to the development of the following set of variables:

<table>
<thead>
<tr>
<th>Name</th>
<th>Grounded</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td>35</td>
</tr>
<tr>
<td>Technology &amp; Resources of Residents</td>
<td>26</td>
</tr>
<tr>
<td>Retail</td>
<td>24</td>
</tr>
<tr>
<td>Quality of Neighborhood Organization</td>
<td>23</td>
</tr>
<tr>
<td>Infrastructure</td>
<td>21</td>
</tr>
<tr>
<td>Environment</td>
<td>13</td>
</tr>
<tr>
<td>Information Accessibility</td>
<td>8</td>
</tr>
<tr>
<td>Sustainability</td>
<td>7</td>
</tr>
<tr>
<td>Affordable Housing</td>
<td></td>
</tr>
</tbody>
</table>

This set is analyzed and evaluated using literature and the Atlas.ti software. The finalized list of variables is ready to be used in the second round of the Delphi design. In addition to this result, the Atlas.ti software has made it possible to identify differences in perspective amongst stakeholders in a structured and scientific manner.
5.4  Round 2: Part I

The first part of the second round of the Delphi method has the following structure:

<table>
<thead>
<tr>
<th>Round 2: Ranking variables</th>
</tr>
</thead>
</table>
| **Question:** Panelists are asked to rank the list of variables derived from round 1 on the spectrum of participatory development. "Please select the level which you think would be most appropriate for a local project for [variable x]."
| **Set-up:** Structured, use of online questionnaire (see appendix B).
| **Panels:** Two panels are treated as two separate groups.
| **Data processing:** After collection of the data, calculate mean rank for each item. Assess consensus for each list within each panel using Kendall’s W.

Due to the restrictions of time and distance, the choice has been made to execute the second round online. The complete questionnaire form can be found in appendix B.

All panelists received an e-mail with a link to the online questionnaire and an attached document containing relevant information. The document provides the spectrum of participatory development and a list of definitions for each of the variables.

Not all panelists completed the second round. Eighteen of the 21 participants filled out the questionnaire. This resulted in 9 responses from the government panel and 9 responses from the resident panel. Since the complete panels consist of 11 resident members and 10 government members, the response rate in the government panel was a little higher. Looking back at the Delphi method guidelines as set out in chapter three, the literature recommends 10-18 members on a Delphi panel in order to get accurate results. There are examples of panels with a lower number of members, but this is not desirable. The overall panel, consisting of all participants, still has the desired size, but the analyses of the results of the separate government and resident panels can be less accurate, because those numbers have dropped just below 10.

5.4.1  Results of Round 2: Part I

All panelists received a list of variable definitions and a simplified overview of the spectrum of participation (figure 5.22).

<table>
<thead>
<tr>
<th>Inform</th>
<th>Consult</th>
<th>Involve</th>
<th>Collaborate</th>
<th>Empower</th>
</tr>
</thead>
<tbody>
<tr>
<td>Government decides and informs residents about their decision.</td>
<td>Government decides, but gives residents a chance to voice their opinion.</td>
<td>Government and residents make plans together, the government executes the plans.</td>
<td>Government and residents collaborate in planning and execution.</td>
<td>Residents decide and execute plans, government supports if necessary.</td>
</tr>
</tbody>
</table>

*Fig. 5.22: Simplified Spectrum of Participation as used in the Online Questionnaire.*

With this information, they were asked to assign a level of participation to each variable, according to their perceived appropriateness. The levels are labeled 1-5 in order to accommodate
a numerical input, where 1 indicates a choice for the Inform level, and 5 indicates a choice for the Empower level.

The results from the questionnaire are provided in figure 5.23.

<table>
<thead>
<tr>
<th>Panelists</th>
<th>Variables</th>
<th>Panel Kendall’s W</th>
<th>Interpretation</th>
<th>Confidence in Ranks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residents</td>
<td>A</td>
<td>0.6216</td>
<td>Moderate agreement</td>
<td>Fair</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>0.6699</td>
<td>Moderate / strong agreement</td>
<td>Fair / High</td>
</tr>
<tr>
<td>Combined</td>
<td></td>
<td>0.6322</td>
<td>Moderate agreement</td>
<td>Fair</td>
</tr>
</tbody>
</table>

The panelists are labeled by number in order to protect their anonymity. The first group of 9 results originate from the resident panel, the second group of 9 results represent the government panel. The variables are labeled by alphabet. The letters correspond to the list of variables derived from round 1 (figure 5.24).

The objective of round 2 is to analyse to what extend the perspectives of both stakeholders diverse when the focus is placed on specific variables instead of on a general view of participatory development. Now that the panelists have expressed their view on participation for each of the variables, the level of concordance can be calculated. Using the methods as described in chapter 3, the following values for Kendall’s W are obtained:

All results fall within the 0.6 – 0.7 category of interpretation, although a slightly higher concordance can be observed in the government panel. Most notable is the result for the
combined panels; a moderate agreement here indicates that the perspectives of the residents and the government are not as different as their discourse vocabulary seemed to imply. In order to understand how the Kendall’s W results came to be and to prepare for the next step in this research, the questionnaire results for each variable are evaluated.

**Population**

Figure 5.26 shows the results for the Population variable.

<table>
<thead>
<tr>
<th>Variables</th>
<th>A</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3</td>
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<td>2</td>
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<td>3</td>
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<td>17</td>
<td>2</td>
</tr>
<tr>
<td>18</td>
<td>2</td>
</tr>
</tbody>
</table>

*Fig. 5.26: Results for the Population Variable.*

The assessment of the Population Variable by panelist has led to divergent results. It has become apparent that the panels found "Population" a particularly difficult variable to deal with. All panelists agree that in order for the Lower Ninth Ward to move forward in recovering, the population has to increase. But the results show that neither the residents, nor the government have a clear view on how that could work in practice.

The residents tend towards the option of forming a partnership with the government; the two levels of participation selected by residents are “Involve” and “Collaborate”. This indicates that the residents at least want to form a plan together. Whether the implementation of such a plan should be executed by the government or the residents, is not consentiently expressed.

The government panel provided results in four different levels of participation. The only level not listed is "Inform". This indicates that the government panelists agree that some form of participation from residents is necessary to increase the population.
Technology & Resources of Residents

Figure 5.27 shows the results for the second variable.

<table>
<thead>
<tr>
<th>Panelists</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
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<th>16</th>
<th>17</th>
<th>18</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variables</td>
<td>8</td>
<td>4</td>
<td>4</td>
<td>2</td>
<td>5</td>
<td>3</td>
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<td>4</td>
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<td>4</td>
<td>5</td>
<td>4</td>
<td>5</td>
<td>4</td>
<td>3</td>
</tr>
</tbody>
</table>

Fig. 5.27: Results for the Technology & Resources of Residents Variable.

Looking at the results from the resident panel, a majority indicates that the improvement of technology and resources of residents should be done through extensive participation. The levels “Collaborate” and “Empower” correspond to a desire to either shape and execute plans together, or to do so on their own with support from the government. A small minority assessed lower levels of participation to this variable.

The government panel shares this perspective in an even more cohesive result.

The shared perspective emerges in the results of the combined panel.
Retail

Figure 5.28 shows the results for the second variable.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Panelists</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18</td>
<td>3 5 3 4 3 4 5 5 4 4 4 5 3 3 4 3 4 3</td>
</tr>
</tbody>
</table>

The results of the resident panel are equally spread across three levels of participation. This indicates that, at a minimum, residents want to make plans together with the government. One third of the resident panelists wants the local government to execute those plans. One third wants to collaboratively execute plans. One third thinks that retail is something the residents should plan and execute on their own, with support from the government.

The government panel provided similar results, with a little less support for the “Empower” level. This means that the government panel actually sees itself as playing a bigger role in the recovery of retail than the resident panel does.

None of the panelists have chosen the “Inform” or “Consult” level.

The combined results show a significant support for the “Involve” and “Collaborate” levels of participation. A similar perspective on the Retail variable is definitely present.
Quality of Neighborhood Organization

Figure 5.29 shows the results for the Quality of Neighborhood organization variable.

The resident panel shows a clear preference for the “Empower” level when asked to give their perspective on improving the Quality of Neighborhood Organization. Three out of nine residents indicate that they would prefer to partner more actively with the local government through an “Involve” or “Collaborate” approach.

The results from the government panel are very similar, but the government panelists do lean a little more towards the “Collaborate” level.

As can be seen in the combined results, no panelists think the government should be in charge of improving the quality of the neighborhood organization; every participant agrees that this has to come from the community.
Infrastructure

Figure 5.30 shows the results for the Quality of Neighborhood organization variable.

<table>
<thead>
<tr>
<th>Variables</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
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<td>2</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>1</td>
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</tr>
</tbody>
</table>

The results from the resident panel show an equal preference for the “Inform” level and the “Consult” level. This means that they either want the government to only keep them informed on planned projects, or want to be consulted on the planning. No panelists thinks they should be involved in the actual planning, let alone the execution.

A similar perspective can be observed in the results of the government panel. Government panelists have a slightly higher preference for the “Inform” level. There is one government panelist who believes that residents and local government should make plans together.

The combined panel results show the similarity in perspective on the approach to improve the infrastructure.
Environment

Figure 5.31 shows the results for the Quality of Neighborhood organization variable.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Panelists</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18</td>
</tr>
<tr>
<td>F</td>
<td>2 4 3 1 3 3 2 4 3 2 1 1 1 3 3 3 3 1</td>
</tr>
</tbody>
</table>

The resident panel indicates it would select either the “Consult”, the “Involve”, or the “Collaborate” level. This means that at the least they want to be consulted on matters related to the Environment variable, but the level of participation could be extended to a joint planning and implementation process.

The government panel has a different perspective on the Environment variable. They believe that the highest appropriate level of participation is “Involve”. There is an equal amount of government panelists that have chosen the “Inform” level as the “Involve” level, and there are two panelists who chose the “Consult” level.

Comparing the results of both panels show a clear difference in perspective, though there are opportunities for working towards a shared vision, because both panels have high scores for the “Involve” level. This means that any project aimed at improving the environment, is most likely to succeed when the process is based on the “Involve” level of participation: a joint planning effort and an executive government.
Information Accessibility

Figure 5.32 shows the results for the Quality of Neighborhood organization variable.

<table>
<thead>
<tr>
<th>Panelists</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
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<th>11</th>
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<th>15</th>
<th>16</th>
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<th>18</th>
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</thead>
<tbody>
<tr>
<td>Variables</td>
<td>G</td>
<td>2</td>
<td>2</td>
<td>2</td>
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<td>3</td>
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</tbody>
</table>

The results from the resident panel show a strong preference for the “Consult” level, though three panelists have chosen for higher levels of participation. This means that the perspective on information accessibility of the residents strongly feels that they should be consulted, but that it is the government’s task to improve this variable.

The government panel shares this perspective, with almost identical results.

The graph depicting the results from the combined panel confirms this.
Sustainability

Figure 5.33 shows the results for the Quality of Neighborhood organization variable.

<table>
<thead>
<tr>
<th>Variables</th>
<th>H</th>
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<tbody>
<tr>
<td>1</td>
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<td>18</td>
<td>4</td>
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</tbody>
</table>

The resident panel has a clear perspective on how to improve matters related to the sustainability variable. All panelists have either chosen the “Collaborate” level or the “Empower” level. This indicates that they either want to plan and implement sustainability projects together with the local government, or do so entirely on their own with support from the government.

The results from the government panel show that they share this perspective, although only one government panelist opted for the “Empower” level. This means that the government panel almost unanimously sees sustainability measures as an opportunity for partnerships.

The combined results show the high level of concordance regarding the sustainability variable.
**Affordable Housing**

Figure 5.34 shows the results for the Quality of Neighborhood organization variable.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Panelists</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2 3 5 2 4 5 2 2 4 3 3 2 3 4 3 4 3</td>
</tr>
</tbody>
</table>

The results from the resident panel show that there is no clear shared perspective amongst the residents regarding affordable housing. With the exception of the “Inform” level, all other levels have been selected.

The government panel has a slightly more focused result. Three levels have been selected, where the “Involve” level has by far the most results. This indicates that the majority of the government panel thinks that the appropriate approach to projects concerning the improvement of affordable housing would be to plan together with residents, but to leave the implementation to the government.

The combined results show that there is no significant concordance in the overall panel regarding affordable housing.
5.4.2. Conclusions

The results of round 2 of the Delphi method shed light on the perspectives of residents and local government on participatory development. The concordance within panels and in the combined panel can be interpreted as a moderate agreement.

Evaluating the results for each variable separately provides an explanation for this moderate agreement. Some variables have results that are almost identical for both panels, where other variables showcase a lack in concordance between both stakeholders, but sometimes also within a panel.

Results without Concordance
The following variables showed the least similarities in stakeholder perspectives:

- Population
- Environment
- Affordable Housing

There is no apparent shared perspective on what approach would work best for these three variables. This result entails that it is of no use to proceed to the third round with the variables Population, Environment, or Affordable Housing, because none of the possible approaches has proven to have sufficient support amongst the stakeholders.

Results with Concordance
The following variables showed a clear concordance in stakeholder perspectives:

- Technology & Resources of Residents
- Retail
- Quality of Neighborhood Organization
- Infrastructure
- Information Accessibility
- Sustainability

Uncovering a shared perspective for a variable means that the variable is qualified to proceed to the third round; project opportunities can now be identified within the appropriate approach.
5.5 **Round 2: Part II**

The set up of the online questionnaire enables incorporation of two Delphi rounds: the second round and the third round. The second round asked panelists to assign levels of participation to the recovery variables (see: chapter 5, section 4). After selecting the desired levels of participation for each variable, panelists are asked an additional, open-structure question. The objective of this third round is to unveil how panelists think their selected level of participation would work in reality.

The following question is used:

*Can you think of a possible way to improve [variable x] under the participation level that you marked as best?*

The initially drafted question asked panelists to think of a possible project, but this choice of words was changed after the test panel expressed having difficulties with the word ‘project’.

This chapter summarizes and evaluates the results of the third round. Since the second round of the Delphi model revealed that there is no clear concordance for three of the variables (Population, Environment, and Affordable Housing), the suggested recovery opportunities for these variables are unfortunately irrelevant. Without a shared perspective on the level of participation regarding a variable, the suggested projects could easily fall within a participation approach that has no broad support. They are therefore excluded from this chapter.

The questionnaire used to execute the second round of the Delphi method consists of two parts. The first part is the ranking of variables on the spectrum of participatory development. The results are presented in chapter 5. The second part of the questionnaire (appendix B) is an open question, asking the panelists to describe a possible project for each of the variables that would fall under the level of participation they selected. This chapter will analyze and evaluate those suggestions and look into opportunities for recovery projects based on the results of this research.
5.5.1. Results of Round 3

Technology & Resources of Residents

The majority of the panelists selected either the “Collaborate” or the “Empower” level of participation.

This means that the desired approach to improving the technology and resources of residents is to jointly plan and implement projects, or to let residents plan and implement projects with government support.

From all suggestions made for the variable “Technology & Resources of Residents”, the following two are suitable for further evaluation:

> Connect with organizations, ask for support from the government to do so.

> If all residents can pay a small amount of money, the sum can be invested in necessary building equipment, like scaffolding and tools. A library-like system can be set up where residents can borrow tools.

The first suggestion refers to a project where the government helps the residents to improve their social capital. This project would fall under the “Collaborate” approach. Residents and local government identify possible external stakeholders (e.g. local universities). A local government affiliate can then support residents in establishing contact with the external stakeholders. Support can be to act as a mediator between residents and external stakeholders, or can be as basic as instructing residents on how to use the internet to get in touch with external stakeholders.

The second suggestion refers to a project where the residents set up a library-style point for building equipment. This project would fall under the “Empower” approach. Residents make plans and implement them. Residents are in charge of raising funds and deciding on what tools can be purchased. The government can support this project by offering a government-owned local property as a location for this project.
Retail

There are three preferred approaches for the Retail variable, of which two have the most supporters: “Involve” and “Collaborate”. All three selected approaches lean towards the bottom-up side of the spectrum of participation.

The following suggestions are suitable for further evaluation:

> Make it easier to open a shop on your own property even if it is not the right zone.
> Have a meeting with residents about possibilities of mixed zoning and special regulations for businesses.
> If the government has homes that they bought from residents and other people want to use them as an office or workspace or studio, people could come together and the government can let them use a house for non-residential purposes.
> Offer advertisement spaces for lower price when retail are located in the Lower Ninth Ward.

The first two project suggestions would fall under the “Involve” approach. The local government and residents make plans for the zoning ordinance together, and the government executes the plans. By changing the way residential zoning is restricted at the moment, it will be easier for residents to set up retail on their own property.

The third suggestion refers to a project in the “Collaborate” or “Empower” level of participation. The residents start with starting a collective of people who are in need of a small workspace, possibly shared. Residents can do so on their own or with the help from a government affiliate. Residents and government then can plan together and articulate what type of workspace would be desirable. The government can support the implementation by offering a government-owned property for non-residential purposes.

The fourth suggestion is a project based on a promotional incentive aimed at making the Lower Ninth Ward more attractive for businesses and visitors. The government can improve the attractiveness of the neighborhood for retail by offering advertisement space and other promotional opportunities to Lower Ninth Ward businesses for a discounted rate. This way, businesses can afford advertisement in popular locations, like the French Quarter. Because it is entirely up to residents (and other interested parties) whether or not the retail supply will increase, and the government only fulfills a supportive role, this project falls under the “Empower” level. Extensive plans for promotional campaigns are possible too, and would fall under the “Collaborate” level.
Quality of Neighborhood Organization

The majority of panelists (11 out of 18) selected the “Empower” level as most appropriate for the improvement of the quality of the neighborhood organization. There is also support for the “Collaborate” level, and even a little for the “Involve” level.

The following suggestions offered by panelists are fit for further evaluation:

> Entirely up to the residents. It’s their neighborhood, they should be as involved as they wish. The government should listen to them.

> Government assists in showing residents how other neighborhoods have set up their organizations.

> I was gonna say empower but that doesn’t work here apparently we need a little help.

> Organize meetings about government’s project so people can relate and organize themselves out of these meetings.

All suggestions refer to the “Empower” level, except for the third comment. This panelist articulates that improving the quality of the neighborhood organization needs some form of government assistance and can therefore still be categorized under the “Empower” level. Overall, the shared perspective is that it is a task for residents to improve the neighborhood organization, but support from the government is highly desirable.

A project incorporating government support can include a visit to a meeting of the Broadmoor neighborhood organization and further support in adopting their methods.

Infrastructure

The selected levels of participation for the improvement of infrastructure fall all but one under the “Inform” and “Consult” level. This indicates that projects concerning the improvement of this variable should be taken on by the government, with or without consulting residents.

Suitable suggestions:

> Government’s responsibility, but should listen to residents as they know what problems are.

> Consult, see if people without a car need bus alternatives. Maybe look into bicycle plans if the city can provide the paths.
The first suggestion refers to the “Consult” level. It indicates that any projects for infrastructure improvement are the government’s responsibility, but consultation of residents is desirable.

The second suggestion refers to a project planned and implemented by the government, after the consultation of residents. It would involve setting up a rental point for bicycles, where residents can rent bicycles for a fair price. Projects like this have been implemented in other US cities.

Information Accessibility

The majority of panelists have selected the “Consult” level as most appropriate for the improvement of information accessibility. There is a significant number of proponents for the “Involve” level as well. This indicates that projects concerning the improvement of this variable would be executed by the government, after either consultation of residents or after a joined planning effort.

The following suggestions are suitable for further evaluation:

> **Have an easy way for residents to learn about government programs from somewhere right in their neighborhood.**

> **Create a free newspaper, which budget will be based on advertisement.**

> **Collaborate with residents to find out what kind of information they are lacking now. Make a plan together how this can be improved (internet or in the neighborhood).**

The first suggestion refers to a project where the government opens an information point in the neighborhood. This information point can be used for consultation of residents and for meetings and joined planning efforts.

The second suggestion is a project that will initiate a local newspaper, offering updates on government plans and opportunities for participation on a regular basis. How the newspaper is set up can be decided by government and residents together, or through consultation. The execution of this project is done by the government.
Sustainability

The selected levels of participation for the improvement of the sustainability variable all fall under two categories: the “Collaborate” level and the “Empower” level. Both levels of participation are on the bottom-up side of the spectrum.

The following suggestions are fit for further evaluation:

- Let people use abandoned lots as gardens.
- Allow residents to sell both food and energy.
- Look into federal funding for sustainability and farming.
- Collaborate, have a meeting with other stakeholders too (energy/park/nature) to see if any projects with the residents can be initiated that would generate profit for multiple stakeholders.

The first suggested project aims at expanding the urban farming efforts in the Lower Ninth Ward. This project would fall in the “Empower” level of participation. The government allows residents to (temporarily) use abandoned lots owned by the government for growing fruits and vegetables.

The second suggestion also refers to the “Empower” level. Any regulations (e.g. zoning ordinance) that are currently obstructing residents from selling surplus food and energy can be revised by the government, looking into opportunities to enable residents to turn sustainable food and energy efforts into a profitable endeavor.

The third suggestion indicates a “Collaborate” level of participation. The government takes charge of locating and using federal funding for sustainability and farming. Residents and government then make plans together on how to use those funds. Execution can be done jointly or by the residents, depending on the outcome of the planning process.

The fourth suggestion refers to the “Collaborate” level. It is similar to one of the project suggestions for the improvement of residents’ technology and resources: set up connections with external stakeholders. Energy companies could be interested in harvesting solar energy, where residents can accommodate solar panels on their property in exchange for a share of the generated energy. The government can take on the role of mediator.
5.5.2. Conclusions

This chapter presented and evaluated the results from the third round of the Delphi model. In order to acquire the results, panelists were asked to answer the following question in the online questionnaire:

*Can you think of a possible way to improve [variable x] under the participation level that you marked as best?*

The resulting suggestions have been evaluated using the corresponding levels of participation. For each suggestion, the implications, involved stakeholders, and course of action are explained. The opportunities for recovery projects resulting from this chapter provide tangible starting points for participatory developments in the Lower Ninth Ward.
5.6 Conclusion

This chapter set out to analyze the differences and similarities in the perspectives of the residents and the local government. By implementing a tailored Delphi method design, incorporating other methods like the Atlas.ti software, it is possible to analyze group perspectives in a scientific and structurized manner.

Round 1

The results from the first round show what variables would aid the recovery of the Lower Ninth Ward if they would be improved, according to both panels. Some striking similarities can be observed, and some notable differences have come to light. The combined list resulting from the first round is used to execute the second round of the Delphi method.

- Population
- Technology & Resources of Residents
- Retail
- Quality of Neighborhood Organization
- Infrastructure
- Environment
- Information Accessibility
- Sustainability
- Affordable Housing

Round 2, Part I

The results from the second round show that there is a moderate agreement among panelists. By analyzing the results for each variable separately, the perspectives of residents, local government and the combined panel are evaluated regarding the levels of participation. Overall, the results are very promising, as they indicate at least some degree of shared perspectives for over half of the variables. It must be concluded, though, that there are also variables where no clear similarities in perspectives can be found.

Variables with Concordance:
- Technology & Resources of Residents
- Retail
- Quality of Neighborhood Organization
- Infrastructure
- Information Accessibility
- Sustainability

Variables without Concordance:
- Population
- Environment
- Affordable Housing

Round 2, Part II

The resulting suggestions have been evaluated using the corresponding levels of participation. For each suggestion, the implications, involved stakeholders, and course of action are explained. The opportunities for recovery projects resulting from this chapter provide tangible starting points for participatory developments in the Lower Ninth Ward.

The methods used in this chapter have proven to be successful in identifying differences and similarities in stakeholder perspectives.
6 Model
6.1 Introduction
As shown in the theoretical framework, the Emergency Management cycle (depicted in figure 7.1) allows various opportunities for engaging residents in planning and implementation all across the process of post-disaster redevelopment. Ideally, the participation of residents would take place in every phase of the emergency management cycle. However in many realities, as in the Lower Ninth Ward, communities can get left out of the process for numerous reasons.

The model presented in this chapter is aimed at facilitating the inclusion of residents in the recovery phase of the post-disaster redevelopment process. It has taken into account that the optimal process of post-disaster redevelopment is not always present in reality. Often, as in the Lower Ninth Ward, planning can be flawed or incomplete and residents are not involved. In order to prevent extreme recovery lagging and to support the excluded communities, this new model provides the tools and guidelines to start the inclusion of participatory development in a later phase of the post-disaster redevelopment cycle.

This chapter explains how current models deal with the topic of participation. The goals of the new model and the differences between the new model and existing protocols are set out. The new model is derived from methods used in and designed for this research and can be evaluated on its functionality regarding the case study of the Lower Ninth Ward.
6.2 Existing Models

There are many sources providing models on the optimal way of incorporating participatory development in the post-disaster redevelopment cycle, but they all focus on structures implemented in the pre-disaster phase (see also: chapter 2, section 2.2). Other sources offer tools to support participation in the redevelopment process; like charrettes, meetings and presentations. However, no sources explain how to use those tools when the suggested participation of communities has not taken place prior to the disaster event. Figure 7.2 illustrates this problem.

The models for implementing participatory development in a pre-disaster phase cannot simply be duplicated for post-disaster purposes. The characteristics of both phases are fundamentally different and obstruct the use of pre-disaster systems in a post-disaster setting. Even the government structure changes significantly as soon as a disaster strikes (see also: chapter 4, section 2.3.)

The model as used in this research incorporates methods which are adjusted specifically to accommodate the post-disaster recovery phase. By doing so, the reasons why existing models turned out to be inadequate in post-disaster recovery are explicitly addressed and reckoned with.
6.3 Objectives of the New Model

The goals of the new model are to counter the four biggest issues found in current post-disaster recovery frameworks regarding the implementation of community participation. As section 1.2 explained, these issues are as follows:

- Participation in post-disaster redevelopment is accepted as a key factor in establishing a successful recovery, but no guidelines on how to implement it are available.
- Existing literature and government documentation provide a list of tools for the implementation of participation, but there are no protocols that explain how to use them. Most tools focus on the ability of residents to partake in a meeting, charrette, or workshop. People will be displaced and infrastructure will be damaged when a disaster strikes; changing normal circumstances into a situation where it will be especially hard for people to attend such an activity.
- Current models focus on the board of the neighborhood organizations as representatives of the residents. In reality, not every neighborhood has such an organization. Even in neighborhoods where a well-functioning organization is in place, after a disaster has hit an urban area, community organization boards may be dispersed. This can result into mis-representation or even non-representation of communities in the process.
- A common attitude of local governments and even scholars towards participation is that it will be too time consuming. Often the assumption is made that residents will be unwilling to participate.

The new model addresses each of these issues. It provides implementation guidelines, protocols and ready-to-use documents.
6.4 The New Model
This section provides an overview of the model; the full protocol, including corresponding
documents and guidelines, can be found in appendix A.
The model consists of a series of six steps; all but the first set in an iterative review structure. Steps 2-6 consist of various actions (blue squares), leading to tangible results shown in the red boxes. Iterative feedback flows are indicated by the arrowed lines. Steps 1-5 are all represented in chapter 5.

**Step 1: Process Manager**
Designate the task of managing the process to an independent actor. This can be a government official, as long as he/she remains neutral and strictly observational of the actual input.

**Step 2: Panel Formation**
The process manager sets up criteria for two stakeholder panels. These criteria need to be based on local context. Further guidelines regarding the formation of sound criteria can be found in appendix A1. The second action of step 2 is to contact possible panelists and acquire contact information. In order to secure the validity of the process, the process manager verifies the criteria and selection with experts.

**Step 3: Interviews**
The process manager conducts the first round of Delphi: the interviews. Well-instructed aides can be used for assistance. Subsequently, all interviews are transcribed. All transcripts are then analyzed using the Atlas.ti software. If the process manager is unable to perform the analysis, a professional with Atlas.ti experience should be hired. The results of the transcription analysis are used to compose a list of variables.

**Step 4: Questionnaire**
For the first part of the second round of Delphi, the process manager sets up a questionnaire and distributes them to all panelists. The panel concordance is calculated and the results are analyzed for each variable. Detailed guidelines regarding the questionnaire and the calculations can be found in appendix C.

**Step 5: Project Suggestions**
The process manager conducts the second part of Delphi round 2. The project manager performs open interviews with the panelists in order to gather project suggestions. The suggestions are evaluated and the project manager writes a report explaining all options for each variable.

**Step 6: Meeting**
After the process manager has gathered viable project opportunities, he presents them to all panelists. Panelists are asked whether or not they are willing to take on one of the proposed projects. It is important to look for project managers within the panel first, since the people involved in the process are already invested in improving the recovery. If it turns out to be unlikely to find a project manager within the panel, the process manager has the task of researching external project management possibilities. If any panelists have unfortunately left the panel, it is the process manager's task to find replacements. If any of the project opportunities moves on to implementation, it is the task of the process manager to offer support when needed.
6.5 Conclusions

Participation in post-disaster redevelopment is accepted as a key factor in establishing a successful recovery, but no guidelines on how to implement it are available for the recovery phase. This model makes it possible to fill that gap. It enables a step-by-step implementation of the methods and tools provided, taking the specific obstructions of the recovery phase into account.

The protocol explicitly deals with situations where residents are unable to function as they would in their daily lives. It minimizes the request for mobility and organizing on the residents’ behalf and it is suitable for implementation, even when there is no functional neighborhood organization. It shortens the time needed to start up participatory development by replacing the elaborate methods of setting up a new neighborhood organization first, before moving on to actual recovery topics, by a model that relies on the collective knowledge of residents that fit the profile of selected criteria.

It is highly recommended that this model is tested and researched more. It has only been implemented in the context of this graduation research, and there are currently no actually planned or executed resulting recovery projects to reflect on.
Conclusions
7.1 **Introduction**
This chapter summarizes the results of the graduation research, provides answers to the research questions, and presents an expert review & overall evaluation of the process and conclusions.

7.2 **Results**
The composition of the theoretical framework by doing an extensive literature review has resulted in a clear definition of participatory development and a practical spectrum of participation.

<table>
<thead>
<tr>
<th>Inform</th>
<th>Consult</th>
<th>Involve</th>
<th>Collaborate</th>
<th>Empower</th>
</tr>
</thead>
<tbody>
<tr>
<td>Government decides and informs residents about their decision.</td>
<td>Government decides, but gives residents a chance to voice their opinion.</td>
<td>Government and residents make plans together, the government executes the plans.</td>
<td>Government and residents collaborate in planning and execution.</td>
<td>Residents decide and execute plans, government supports if necessary.</td>
</tr>
</tbody>
</table>

The next objective of the research is to design a participatory development model capable of enabling residents & local government to form a mutual understanding about planning & implementing post-disaster redevelopments in the recovery phase, identifying essential local recovery projects accordingly. The methods used in and designed for this case study have resulted in a model that enables a community to start participatory developments in the recovery phase, even when the residents have been excluded from the post-disaster redevelopment process so far. The differences in government and resident perspective have been analyzed and evaluated, resulting in a list of nine variables:

- Population: 25
- Technology & Resources of Residents: 26
- Retail: 24
- Quality of Neighborhood Organization: 23
- Infrastructure: 21
- Environment: 21
- Information Accessibility: 13
- Sustainability: 8
- Affordable Housing: 7

The panelists have assigned appropriate levels of participation to each of the variables, according to their perspective. The results from this part of the research indicate a moderate agreement among panelists. This means that for six variables, there is a shared perspective on the desired approach to participatory development opportunities. For three variables, the conclusion has to be made that there is no shared perspective at this point in time.

The panelists have offered suggestions for project-based recovery opportunities. These suggestions have been evaluated using the spectrum of participation and are explained regarding their implications for tangible projects.
7.3 Answering the Research Questions

SUB-QUESTIONS

1) What are the perspectives of the city government and the local community on recovery and participatory development in the Lower Ninth Ward?

The perspectives of the government panel and the resident panel on what variables have to be improved in order for the Lower Ninth Ward to move forward in recovery have both striking similarities and significant differences. Five variables are mentioned by both panels: “Information Accessibility”, “Infrastructure”, “Population”, “Quality of Neighborhood Organization”, and “Retail”. All other variables are either not completely similar in definition or are only mentioned in one panel.

The perspectives of the government panel and the resident panel on what level of participation would be the most appropriate approach for each variable are in moderate agreement. There is no shared perspective noticeable for three out of nine variables: “Population”, “Environment”, and “Affordable Housing.”

2) How can the differences or similarities in the perspectives of the city government and the local community identify opportunities for local recovery projects?

By asking panelists to suggest possible opportunities for participatory development projects related to specific variables, a selection of suitable projects can be made. Each suggestion is evaluated using the results from the second Delphi round; if the suggested project fits within the appropriate level of participation according to the panel perspectives, it is approved.

3) In what ways can the methods used in the case study contribute to the prevailing models of participation in post-disaster redevelopment?

The model as presented in chapter 7 can be used to reproduce the methods as implemented in this research. Prevailing models of participation focus on implementation in the pre-disaster phase. This model is designed specifically for implementation in a post-disaster situation. Known issues in existing models are addressed. This model has the potential to offer excluded communities the means to participate in redevelopment efforts at a later point in the post-disaster redevelopment process.

MAIN RESEARCH QUESTION

How can a community start participatory developments in the recovery phase by working towards consensus with the local government in order to overcome being left out of the post-disaster redevelopment process?

This thesis aims at providing the knowledge, tools and guidelines to successfully accomplish taking the first step towards a consensus. Whether a consensus will be reached, is up to the stakeholders and their commitment to the process.

This thesis offers the means to kickstart a recovery process for communities that have found themselves unable to join the city in its redevelopment. It leads to a mutual understanding on what participatory development entails. It presents a model that will research, evaluate and support a mutual understanding among government and residents. The only step left towards a consensus is the actual implementation of recovery projects.
7.4 **Recommendations**

The results and conclusions give cause for the following recommendations:

- Any person or institution publishing plans and documents on participation need to explicitly clarify the conception of the term. The theoretical framework of this research is recommended to be used for this purpose.
- In order to include neighborhoods left out of a redevelopment process, participatory development needs to be initiated. The model offered in this thesis is recommended to be used for this purpose, but it needs to be further tested and reviewed first. Students can use the conclusions of this research as a starting point for further case studies to test the model. Redevelopment actors (residents & government) can use this model for practical implementation, but it is highly recommended to set up a pilot case first, in order to enable further testing and reviewing of the model. The model has the potential to be a sound alternative to the current, limited options of participatory development in New Orleans, but it should be used with caution.
- The suggestions made for recovery projects are recommended for further evaluation by the local government and residents. After additional reviews by both stakeholders, the suggested projects should be implemented.

7.5 **Reflection**

This section offers a reflection on the research planning, process, and results. The preceding methods and argumentation are evaluated and the position of the research in the graduation studio & a wider social context is reflected upon.

The position of this research within the Urban Area Development studio is addressed in chapter 2. Post-disaster redevelopment is a specific form of urban area development, and participatory development is a specific process within urban area development that is suitable for both post-disaster situations and “normal” context. This means that, even though the main course and results of this thesis are aimed at post-disaster redevelopment, the supporting theoretical framework and methodology can be applied in any sector of urban area development.

The official planning guidelines for graduating offer a 6 month timeline. The execution of this research took longer. There are several reasons for this delay, some regarding personal matters and others simply because I chose to perform a case study abroad, which asked for additional research time and time to manage and pursue contacts. The overall process has been highly iterative. Looking back at products for the P1 and P2 reviews, the envisioned course of research has been adjusted multiple times. The problem statement remained virtually the same. During the execution of the case study, the increase of my personal understanding of the research topics and the amount & quality of input about specific local issues has lead to changes in the determined final products.

The methods selected for the research have been generally sustained throughout the process. The Delphi method is adapted in order to create a desing fit for the context of this research, but the methodology of Delphi has been the method of choice from an early stage. The Atlas.ti method has been incorporated into the Delphi design after the interviews were already executed; the need for a scientific and structured way of analysis arose at this point in the process. Both the Atlas.ti software and the Delphi method proved to be highly appropriate for this research.

The models for implementing participatory development in a pre-disaster phase cannot simply be duplicated for post-disaster purposes. The characteristics fo both phases are fundamentally
different and obstruct the use of pre-disaster systems in a post-disaster setting. The model presented in this research offers a way to facilitate the initiation of a participatory development process in the post-disaster recovery phase. The model is a preliminary document that is recommended for further testing and research. It is in the early stages of development and should not be seen as a final protocol.

In conclusion, the effectuation of this research has been highly iterative and has run into some obstacles, but the final thesis has used the process and the issues it ran into to improve the quality of the methodology, input, and the overall results regarding the case study. The conclusions and recommendations offer several starting points for both stakeholders in this research to support the Lower Ninth Ward in joining the city-wide redevelopment efforts. The final products of this thesis are recommended for future research in order to validate the potential of the model.

I have gained so many skills and so much knowledge during this process, not just about urban area development, but about myself as well. Shaping this research has also shaped me as a person. The process was long and at times hard, but in retrospect I would not change it. Looking back, every obstacle offered a new moment of education.

Yara Crobach
Delft, April 2014
8 Literature


(CDCP, 1997; Silverman, 2004)

(Chambers, 1983; Sen, 1985)

(Prins, 2008) (Sullivan, 2003)