Sense of Place and Climate Change.
Urban Poor Adaptation in the Dominican Republic.

A thesis submitted to the University of Manchester for the degree of Doctor of Philosophy in the Faculty of Humanities

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Contents
List of Tables .................................................................................................................. 5
List of Figures .................................................................................................................. 5
List of Photos ................................................................................................................... 6
Acronyms ........................................................................................................................ 8
Abstract ........................................................................................................................... 10
Declaration ......................................................................................................................... 11
Copyright Statement ......................................................................................................... 12
Acknowledgements .......................................................................................................... 13
Chapter One: Introduction ............................................................................................... 15
  1.1 The research problem .............................................................................................. 15
  1.2 Research aim ........................................................................................................... 17
  1.3 Geographical focus ................................................................................................. 19
  1.4 The research methodology .................................................................................... 19
  1.5 Structure of the thesis ............................................................................................ 20
Chapter Two: Approaches to Adaptation and Adaptive Capacity................................. 23
  Introduction .................................................................................................................... 23
  2.1 Climate change adaptation ...................................................................................... 24
  2.2 Adaptive Capacity ................................................................................................. 27
  2.3 Approaches to subjective adaptive capacity ......................................................... 34
  2.4 Place in human geography .................................................................................... 41
  2.5 Place-related concepts in environmental psychology ........................................... 46
  2.6 A place-based approach to adaptive capacity ....................................................... 53
  2.7 The Dominican Republic: A case study ............................................................... 60
  2.8 Conclusion ............................................................................................................. 66
Chapter Three: Research Approach and Methods ......................................................... 71
  Introduction .................................................................................................................... 71
  3.1 Research aims and questions ................................................................................ 72
  3.2 Methodology: epistemology and ontology ............................................................. 73
  3.3 Case study framework ............................................................................................ 75
  3.4 Sense of place scale of analysis ............................................................................ 76
  3.5 Operationalising the sense of place in adaptive capacity ....................................... 76
  3.6 Research process ................................................................................................. 78
  3.7 Research methods ............................................................................................... 87
  3.8 Reflections on doing intercultural research ......................................................... 103
### Chapter Four: Institutional, donor and municipal approaches to Disaster Risk Management and Climate Change Adaptation

<table>
<thead>
<tr>
<th>Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
</tr>
<tr>
<td>National Disaster Risk Management policy</td>
</tr>
<tr>
<td>National climate change adaptation policy</td>
</tr>
<tr>
<td>DRM and CCA initiatives in the Dominican Republic</td>
</tr>
<tr>
<td>DRM, CCA and the sense of place in the case study communities?</td>
</tr>
<tr>
<td>Conclusions</td>
</tr>
</tbody>
</table>

### Chapter Five: The Case Study Communities

<table>
<thead>
<tr>
<th>Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
</tr>
<tr>
<td>Community characteristics: An overview</td>
</tr>
<tr>
<td>Case Study I: Panchito</td>
</tr>
<tr>
<td>Case Study II: Wilmore</td>
</tr>
<tr>
<td>Case Study III: La Ciénaga</td>
</tr>
<tr>
<td>Local social contexts</td>
</tr>
<tr>
<td>Concluding remarks</td>
</tr>
</tbody>
</table>

### Chapter Six: The House: Keeping up with the Neighbours as Adaptation to Climate Change?

<table>
<thead>
<tr>
<th>Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
</tr>
<tr>
<td>Place dependence and the house</td>
</tr>
<tr>
<td>Place attachment and the house</td>
</tr>
<tr>
<td>Place identity and the house</td>
</tr>
<tr>
<td>Conclusion</td>
</tr>
</tbody>
</table>

### Chapter Seven: The Community: Resistance and Relationships as Sources of Adaptive Capacity

<table>
<thead>
<tr>
<th>Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
</tr>
<tr>
<td>Place identity and the community</td>
</tr>
<tr>
<td>Place dependence and the community</td>
</tr>
<tr>
<td>Place dependence and attachment and the community</td>
</tr>
<tr>
<td>Concluding Remarks</td>
</tr>
</tbody>
</table>

### Chapter Eight: Conclusion: Sense of Place and Urban Poor Adaptation in the Dominican Republic

<table>
<thead>
<tr>
<th>Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
</tr>
<tr>
<td>Main empirical findings</td>
</tr>
</tbody>
</table>
8.2 Contributions to knowledge ..........................................................263
8.3 Theoretical and policy implications..............................................265
8.4 Limitations. ...............................................................................268
8.5 Final comments and future research...........................................269

References.........................................................................................272
Appendix One: List of semi-structured interviews. .........................291
Appendix Two: Visits and events.........................................................296
Appendix Three: Auto-photography participants ............................297
Appendix Four: Glossary of foreign terms........................................298
Appendix Five: Policies for CRM in the Dominican Republic ..........299
Appendix Six: Sample interview questions, residents.......................306

Word Count: 77,803
List of Tables

Table 1: Selection of extreme weather events and disasters 2003-2012. ............... 65  
Table 2: Summary of key issues and indicators used in the research. ..................... 77  
Table 3: Methods employed in each case study community..................................... 87  
Table 4: DRM and CCA policy analysis................................................................. 122  
Table 5: Overview of case study community characteristics................................... 141  

List of Figures

Figure 1: Adaptive capacity's impact on vulnerability.............................................. 29  
Figure 2: Three Factor Model.............................................................................. 52  
Figure 3 Percentage of the urban population taken from censuses 1920-2010 ........ 61  
Figure 4: Zones exposed to hurricanes and tropical storms.................................. 63  
Figure 5: Map of Dominican Republic showing Santo Domingo and Pedro de Macorís (red). ............................................................................................................. 78  
Figure 6: Map of Dominican Republic showing location of Samaná.......................... 84  
Figure 7: Community disease mapping in Wilmore, Samaná................................. 135  
Figure 8: Aerial view of Samaná and Panchito. ..................................................... 142  
Figure 9: Aerial view of Samaná and Wilmore. ...................................................... 146  
Figure 10: Aerial view of Santo Domingo and La Ciénaga..................................... 150
List of Photos

Photo 1: Street prone to flooding in Las Colinas II, San Pedro de Macorís.............80
Photo 2: Example of low quality housing in Las Colinas II, San Pedro de Macorís ...80
Photo 3: Samaná following heavy rain. .................................................................85
Photo 4: Esplanade, Samaná following heavy rain. .............................................85
Photo 5: One entrance to Panchito. .................................................................86
Photo 6: One entrance to Wilmore. ...............................................................86
Photo 7: Junta de Vecinos community centre, Panchito. .........................95
Photo 8: Area prone to flooding, Panchito. ....................................................96
Photo 9: Area prone to flooding, Wilmore. ...................................................96
Photo 10: Part of Panchito built on inclining land, from neighbouring community...143
Photo 11: Example of some roadside housing in Panchito, Samaná ...............144
Photo 12: Hillside housing Panchito...............................................................145
Photo 13: Shared latrine Panchito. ............................................................145
Photo 14: Section of Wilmore and cañada taken from the main road. .............148
Photo 15: Example of low quality house Wilmore...........................................149
Photo 16: Roadside houses in Wilmore. ..........................................................149
Photo 17: One entrance to La Ciénaga. ........................................................152
Photo 18: Rooftops of riverside shacks, La Ciénaga. ......................................153
Photo 19: Example of housing density in parts of La Ciénaga. .................153
Photo 20: Example of desirable house in Panchito as expressed by residents...169
Photo 21: Different housing in Panchito that residents aspired to attain.......169
Photo 22: Outside of Angela’s riverside house in La Ciénaga .......................171
Photo 23: Inside of Angela’s riverside house in La Ciénaga .........................172
Photo 24: Cañada that flowed past Dana’s house, Wilmore..........................177
Photo 25: Raised flooring and a cement wall built by Dana, Wilmore............177
Photo 26: Resident chosen to receive materials to repair her house, Panchito. ....183
Photo 27: Residents’ self-made barricade, La Ciénaga...............................185
Photo 28: Outside Alejandra’s house, Panchito............................................187
Photo 29: Outside of Isabella’s house, Panchito..........................................188
Photo 30: Inside in Isabella’s house, Panchito. ..............................................188
Photo 31: Gabriella standing on land cleared to build the new house, Panchito...193
Photo 32: Path leading to Matias’ house among the trees on the left, Panchito......197
Photo 33: Path in Panchito that Matias wants to widen so cars can enter. .........198
Photo 34: Photo of consolidated housing in Panchito..................................199
Photo 35: Roadside houses in Panchito. .....................................................199
Photo 36: Consolidated housing I, a positive feature of Panchito..................201
Photo 37: Consolidated housing II, a positive feature of Panchito..................201
Photo 38: Outside of Sofia’s house La Ciénaga. .........................................202
Photo 39: Inside of Sofia’s house, La Ciénaga. .............................................202
Photo 40: Outside of Joanna’s house, Wilmore. .............................................202
Photo 41: Inside of Joanna’s house, Wilmore. ...............................................203
Photo 42: Joanna’s house next to flowing cañada, Wilmore..............................205
Photo 43: Outside of Joanna’s house, Wilmore December 2014.................................206
Photo 44: Outside of Joanna’s house, Wilmore December 2015.................................206
Photo 45: Positive aspects of community I. ..............................................................211
Photo 46: Positive aspects of community II. ..............................................................212
Photo 47: Dense housing and narrow path taken from inside Berta’s house, Wilmore. ..............................................................216
Photo 48: Outside communal space after rain, Panchito..............................................222
Photo 49: Outside Manuela’s house after the river had retreated, La Ciénaga .............223
Photo 50: Path leading to Berta’s house, Wilmore ......................................................224
Photo 51: Path prone to waterlogging, Panchito.........................................................225
Photo 52: Landslide/collapsed pathway, Panchito. .......................................................225
Photo 53: A small landslide blocking path in Panchito.................................................226
Photo 54: Resident made path down steep hillside in Panchito.....................................228
Photo 55: Damage to resident’s self-made contention wall, Panchito............................229
Photo 56: Romina’s house with self-built drainage, Wilmore.....................................232
Photo 57: Cluster of family houses in Las Colinas I San Pedro de Macorís ..................237
Photo 58: Resident sitting in the shade preparing food for lunch, Panchito.....................237
Photo 59: Highly consolidated house in Panchito.......................................................241
Photo 60: Some lower quality houses, Panchito.........................................................241
Photo 61: Consolidated house next to latrine shared by neighbours, Wilmore.............242
Photo 62: Concrete stairs and contention wall, Panchito.............................................247
Photo 63: Extended roof. Extended view of contention wall, Panchito.........................248
Acronyms

AECID  Agencia Española de Cooperación Internacional para el Desarrollo  
(Spanish Agency for International Development Cooperation)

CCA  Climate Change Adaptation

CCAD  Comisión Centroamericana de Ambiente y Desarrollo  
(Central American Commission for Environment and Development)

CEBSE  El Centro para la Conservación y Eco desarrollo de la Bahía de Samaná y su Entorno  
(Center for the Conservation and Eco-Development of Samaná Bay and its Surroundings)

COE  Centro de Operaciones de Emergencia  
(Emergency Operations Centre)

CNE  Comisión Nacional de Emergencia  
(National Emergency Commission)

CTN  Comité Técnico Nacional de Prevención y Mitigación  
(National Technical Committee for Disaster Prevention, Mitigation and Response)

CNPMPR  El Consejo Nacional de Prevención, Mitigación, y Respuesta ante Desastres  
(National Council for Disaster Prevention, Mitigation and Response)

CNCCMDL  El Consejo Nacional para el Cambio Climático y Mecanismo de Desarrollo Limpio  
(National Council for Climate Change and the Clean Development Mechanism)

COTESAS  Sub regional Technical Commission for Elaboration of the Agenda and Health Plan

CRI  Climate Risk Index

DRM  Disaster Risk Management

DRR  Disaster Risk Reduction

IFRC  International Federation of Red Cross and Red Crescent Societies

INGO  International Non-governmental Organization

IPCC  Intergovernmental Panel on Climate Change
<table>
<thead>
<tr>
<th>Acronym</th>
<th>Full Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>HFA</td>
<td>Hyogo Framework for Action</td>
</tr>
</tbody>
</table>
| IDDI    | Instituto Dominicano de Desarrollo Integral  
*(Dominican Institute for Comprehensive Development)* |
| GFDRR   | Global Facility for Disaster Risk Reduction |
| GHG     | Greenhouse Gas |
| MEPyD   | Ministerio de Economía, Planificación y Desarrollo  
*(Ministry of Economy, Planning and Development)* |
| NGO     | Non-governmental Organization |
| ONE     | Oficina Nacional de Estadística  
*(Office for National Statistics)* |
| PAHO    | Pan-American Health Organization |
| PECC    | Plan Estratégico para el Cambio Climático  
*(Strategic Plan for Climate Change)* |
| SEMARENA| Secretaría de Estado de Medio Ambiente y Recursos Naturales  
*(State Secretariat for the Environment and Natural Resources)* |
| SICA    | Sistema de la Integración Centroamericana  
*(Central American Integration System)* |
| SNPMRD  | Sistema Nacional de Prevención, Mitigación y Respuesta ante Desastres  
*(National System for Disaster Prevention, Mitigation and Response)* |
| UNFCCC  | United Nations Framework Convention on Climate Change. |
| UNDP    | United Nations Development Programme |
| UNISDR  | International Decade for Disaster Risk Reduction and the United Nations International Strategy for Disaster Risk |
| UASD    | Universidad Autónoma de Santo Domingo  
*(Autonomous University of Santo Domingo)* |
| USAID   | United States Agency for International Development. |
| WHO     | World Health Organization |
Abstract

Adaptation has increasingly come to be recognised as an urgent and necessary response to climate change. The ability of a system to carry out adaptation is dependent on its adaptive capacity. To date, the majority of research relating to adaptation has focused on the objective and material determinants of a system’s capacity to adapt to severe and extreme weather impacts. Whereas the role that subjective factors, such as people’s perceptions, beliefs and values play in that same process, has received comparatively less attention.

Despite being a global phenomenon, climate change is being experienced and responded to in local places. More than just physical locations, places are often imbued with meaning by the people associated with them. This thesis argues that these meanings have implications for the ways in which people adapt, or fail to adapt, to climate change impacts. It uses the concept ‘sense of place’, as a means of capturing this place meaning and as a lens for exploring adaptive behaviours in three low-income urban communities in the Dominican Republic. In particular it examines the specific roles of residents’ place attachment, dependence and identity in motivating and constraining adaptive behaviours.

Based on qualitative research with ethnographic underpinnings, the thesis shows that the urban poor sense of place is shaped by interconnected relationships between residents and; their homes, the physical and social aspects of their communities and a range of non-community actors. These relationships are shaped by physical and social interactions with and within places, but also through the discursive construction of the locations and the inhabitants of them in public opinion. Residents continuously seek out ways to enhance their sense of place, at times as an improvement in the built environment as a means of preventing or ameliorating environmental threats and events. However, often it is enhancement, in an aesthetic sense, which is envisaged as being of equal and sometimes greater importance. Although aesthetic improvements sometimes have the resultant impact of enabling adaptation, this tends to be incidental, rather than purposeful. Despite the importance placed by the urban poor on their sense of place, these subjective determinants and adaptation in the urban environment, remain unrecognised as well as absent from local institutional and policy radars.

Overall the research suggests the need for a more comprehensive approach to understanding adaptive capacities. It requires an approach which continues to measure the objective determinants but which also recognises the role of people’s relationships to places in converting or failing to convert objective capacity into climate change action and in dictating the type activities that are valued and prioritised by urban poor residents themselves.
Declaration

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Chapter One: Introduction

1.1 The research problem

Climate change is one of the greatest threats facing humanity in the twenty-first century. The general consensus is that the phenomenon will not express itself primarily through slow shifts in average conditions over a long period; rather it is expected that the main impacts will be felt via changes in climate variability and weather extremes (Mirza 2003: 233, Helmer and Hilhorst 2006: 1, Van Aalst 2006: 5). While climate variability refers to the variability in the average weather behaviour at a particular location from one year or decade to another (Pittock 2009: 2), extreme weather events are those events such as heat waves, heavy precipitation events, floods, droughts and tropical cyclones (Shukla et al. 2003: 8, Pittock 2009: 2).

The occurrence of extreme events is a feature of natural climate variability (Shukla et al. 2003: 8), however it is thought that climate change is accentuating and will continue to accentuate this feature (Intergovernmental Panel on Climate Change (IPCC) 2007a: 783, 2012: 29). The specific details of these changes have been a point of contention, particularly in relation to climate change and its impact on hurricane and tropical cyclone frequency (see Fussel 2007). However while there may be disagreements on the extent to which climate change impacts on the numbers of hurricanes that take place, there is greater consensus on the notion that the changing environmental conditions, caused by human activities, are providing more energy to fuel storms and cyclones, and therefore these events may become stronger if not necessarily more frequent (Trenberth 2005: 1754, IPCC 2012).

Such events are of particular global concern because of the potential that they have to convert into disasters in the areas that they impact (Schipper and Pelling 2006). Yet, disasters and the range of other climate change impacts are not evenly distributed, generally having greater consequences for disadvantaged people and communities in low and middle income countries who have contributed least to the climate change issue (Dodman et al. 2009: 152, Ayers and Dodman 2010: 162). The vulnerability of these countries is
compounded by their limited resources, inadequate infrastructure and weak and ineffective systems of governance (Ayers and Dodman 2010: 162).

Despite once being considered a ‘defeatist’ response to climate change (e.g. see Fankhauser 1996 and Pielke et al. 2007 in Prowse and Scott 2008: 42) the necessity for and capacities of systems to adapt to climate change impacts have gained increased attention in recent years among policy makers and the academic community. This has been spurred on by an ever increasing realisation that climate change impacts are already manifesting in a number of places and that the lags present in the climate system (the time delay between cause and effect) mean that further impacts are inevitable regardless of efforts to mitigate Green House Gas (GHG) emissions (see Parry et al. 2008).

To date most of the research relating to climate change adaptation has centred on the role that objective assets or material determinants play in building a system’s capacity to moderate the impacts of climate change. However the role that less quantifiable, intangible and subjective factors, such as people’s perceptions, beliefs and values play have so far remained comparatively underrepresented in research (Grothmann and Patt 2005, Fresque-Baxter and Armitage 2012). This is the case despite some studies having demonstrated that subjective features prove equally as important as objective ones in explaining and encouraging adaptive behaviours in some contexts (e.g. Grothmann and Patt 2005).

This disparity is particularly salient in research relating to the adaptation of cities and their inhabitants within the context of the global South. The realisation that too little attention had been paid to understanding the impacts of climate change on the urban poor (Commission on Climate Change and Development 2009: 2), has resulted in increased interest and research into vulnerability and adaptation in urban centres of low and middle income countries (see Bicknell et al. 2009, Dodman et al. 2015). Despite this increased interest in adaptation with reference to urban poor communities, this focus has, to date, remained on the objective determinants of adaptive capacities. The same level of focus cannot be said to have been placed on
understanding the role that intangible subjective assets and values play in the adaptive capacity of such groups to confront disasters and severe weather associated with climate change.

1.2 Research aim

The aim of this research is to expand the emerging focus on the subjective determinants of adaptation and adaptive capacities with specific reference to urban poor communities in the global South. A focus on low income urban settings is crucial. Climate change is increasing and will continue to increase risks for people, assets, economies and ecosystems in urban areas, where more than half of the global population now live (Dodman et al. 2013, IPCC 2014: 15). These include risks from heat, storms, heavy or extreme precipitation, flooding, landslides, pollution, drought, water scarcity sea level rise and storm surges. Such risks are amplified for urban poor communities who often inhabit marginalised and exposed areas with high population concentrations yet lacking in essential infrastructure and services (Dodman 2013, IPCC: 2014).

The research proposes use of the ‘sense of place’, a concept derived from environmental psychology to capture the subjective connections that urban poor households and communities construct with and within their surroundings, as a lens for exploring urban poor adaptive strategies and capacities to confront climate change. It seeks to understand what the nature of the relationship between these two factors are, how it manifests, and how it is expressed by urban poor groups. Overall the research aims to explore whether the drivers of individual and group adaptation to climate change are more varied and complex than assumed in current adaptation debates and that, rather than being dictated solely by economic factors, they are also inseparable from a complex interplay of subjective values and emotions embedded within individuals and communities, with regard to spatial locations and individual understandings of the self in relation to place. As such it aims to contribute to the academic and policy debates as they relate to, the subjective drivers of adaptation in low-income, marginalised settings within the global South.
The research has selected this perspective above other emerging areas of interest in subjective adaptation such as; risk perception (Grothmann and Patt 2005), values (O’Brien and Wolf 2010), perceived adaptive self-efficacies (Grothmann and Patt 2005) and culture (Leonard et al. 2013) for several reasons. Despite being an essentially global phenomenon, the impacts of climate change are felt and responded to in places (Burton et al. 2006). The concept of ‘place’ has been variously defined, understood and approached with roots in a range of theoretical disciplines (e.g. see Hummon 1992, Cresswell 2004). Despite the diverse theoretical backgrounds, at their core, all of these approaches seek to emphasise that ‘places’, are more than just ‘physical locations’, and often have a variety meanings attached to them by the people associated with them.

Emerging research has begun to recognise that climate change has the potential to negatively impact upon places and the meanings that they encapsulate, sometimes with grave consequences for the population who have formed those meanings (e.g. Adger et al. 2011, Cunsolo-Willox et al. 2012). Yet this idea has not yet been sufficiently investigated in relation to the urban environment in cities of the South. Furthermore, while it is known that place meanings can be impacted by changing environmental conditions, within the context of the increasing importance of adaptation, it is also important to explore, in depth, the ways in which this relationship may work in reverse. That is to say how place meanings can motivate or demotivate people to take action to minimise climate impacts. Existing research which recognises the value of such an approach specifically in relation to climate change remains theoretical and lacks investigation in real life contexts (Fresque-Baxter and Armitage 2012).

In this research and in order to allow for a thorough exploration of individual and group relationships to place to occur, the sense of place is operationalised through three, narrower concepts also derived from environmental psychology to capture place meaning. ‘Place attachment’ refers to the cognitive, affective bond that people develop with places to which emotion and feeling are central (Altman and Low 1992). ‘Place identity’ refers to part of each individual’s self-identity and includes ‘those dimensions of self
that define the individual’s personal identity in relation to the physical environment...’ (Proshansky 1978: 155). Finally ‘place dependence’ describes whether a person feels as though their needs and desires can be satisfied in a particular place compared to other places (Stokols and Shumaker 1981). Viewed from this perspective, place attachment, identity and dependence act as indicators and dimensions of an overall sense of place. In particular the exploration and characterisation of the sense of place is narrowed to two units of analysis. These are housing and community. This is to emphasise the localised nature of climate change impacts on places which people interact with and within on a daily basis.

1.3 Geographical focus

The small island developing state (SIDS) of the Dominican Republic provides an ideal setting to examine issues relating to urban poor adaptation and the sense of place. The second poorest nation in the Caribbean region (after neighbouring Haiti) (Medeiros et al. 2011: 28), the Dominican Republic is both highly urbanised (Hoffnung-Garskof 2008) and, owing to its geographical location (in the middle of the hurricane belt for the Atlantic and Caribbean oceans), faces high exposure to hurricanes and tropical storms, whose intensity may increase in an era of global climate change (International Federation of Red Cross and Red Crescent Societies (IFRC) 2012).

In addition to these largescale disaster events, the Dominican Republic also faces high exposure to a range of other hazards, including droughts, heat waves, lightning, landslides, floods, dams bursting and forest fires (IFRC 2012: 17). Within this context, urban centres in the Dominican Republic are thought to concentrate a high quantity of the population that live with the greatest environmental risks associated with severe and extreme weather events in the country (Herrera-Moreno and Orrego Ocampo 2011).

1.4 The research methodology.

Methodologically speaking, the research is underpinned by a subjectivist epistemology and relativist ontology, which allow for an in-depth exploration of residents’ specific experiences in, and subjective feelings towards, place. This
is facilitated by a range of qualitative methods, including semi-structured interviews, participant observation, focus groups and auto-photography. A case study approach was employed to allow for an investigation of the phenomena in a real life context. Three low-income case study communities in two cities were ultimately selected as suitable yet differing sites in which the research could be realised. This qualitative approach marks a methodological departure from existing research into the sense of place and climate change adaptation which has been largely theoretical in nature and lacking in the adoption of specific case study examples that could shed light on existing theoretical approaches (Fresque-Baxter and Armitage 2012).

1.5 Structure of the thesis.

This thesis is comprised of eight chapters. Chapter One has introduced the problem statement; that to date, climate change adaptation research has focused mainly on the material determinants of a system’s adaptive capacity yet the subjective determinants remain comparatively unexplored, particularly within urban settings in the global South. It has provided the research aim, which is to contribute to an increased understanding of the subjective drivers of adaptation and adaptive capacities in urban poor settings of the South, employing sense of place concepts from the field of environmental psychology to help shed new light on such actions. The chapter has also outlined the suitability of the Caribbean small island developing state of the Dominican Republic as the case study country in which the research aim will be realised.

Chapter Two provides an outline of the conceptual and theoretical framework being used to guide the research. In particular it examines the debates related to objective and subjective approaches to climate change adaptation and adaptive capacity. The chapter identifies the specific gaps in knowledge to which this research tries to contribute. It also expands on and justifies the Dominican Republic as the research setting.

Chapter Three presents the research approach, method and tools used. The chapter puts forward the research aims and specific questions that have been developed to address the gaps in the knowledge base. These gaps relate to
the limited understandings of, and case study research into, the subjective approaches to adaptation and adaptive capacities in general, but also with a particular focus on the role that the sense of place plays therein with reference to urban poor settings in the South. The chapter discusses the epistemological and ontological positions underpinning the research and justifies the use of a case study framework. The research process leading to the selection of the case study communities is also discussed, as are the range of methods used in each one of them. The chapter reflects on the research process particularly into issues of translating data, representation and researcher positionality.

Chapter Four focuses on the ways in which national and local policy in the Dominican Republic frames the sense of place and adaptation debate within existing approaches to climate risk management. The sense of place is far from being on institutional and policy radars in the Dominican Republic. This seen to be hindered by a lack of localised accessible information on climate change as well as low capacities to convert such information into urban adaptation policy. Although there is increasing attention on adaptation among institutions and in policy, the debate is framed in terms of its impacts on natural, rural systems and to tourism, with mitigation considered the most appropriate response. Climate impacts on the urban environment are framed in terms of large scale disasters, despite residents from the three case study communities, expressing that these were not the most frequent or problematic events to which they were responding on a regular basis.

Chapter Five presents a more detailed description of the case study communities in which the research was conducted. In this section, the history and origins, location and appearance, housing and population and legal status and key social characteristics of each community is discussed.

Chapter Six characterises the urban poor sense of place in the case study communities in relation to housing. It investigates how this relationship impacts upon the adaptive capacities and strategies adopted to confront climate change impacts. Residents use housing as a means of constructing and presenting a certain self or family image that exceeds, keeps up with, or
at least does not fall significantly behind, that of other community residents.
The methods by which they do this can often, but do not always support adaptation to climate events. Overall the chapter suggests that the desire to construct this image is actually often a greater motivator for action than is the desire to respond to weather impacts particularly in situations where the impacts are slower and incremental, not posing an immediate threat to safety and security.

Chapter Seven characterises the urban poor sense of place in relation to the second unit of analysis, the community. It shows that residents construct a sense of place in the community that responds to their functional and affective needs. It also responds to their desires to resist negative social dynamics and stigmatization from within and without the community. While both of these aspects provided important motives to carry out activities that were supportive of adaptation, the desire to resist negative social dynamics and minimise stigmatization served as a particularly forceful catalyst for engaging such behaviours.

Finally Chapter Eight presents the main conclusions to the thesis. The chapter synthesizes the empirical findings of the research in relation to the research questions as set out in Chapter Three. It highlights the theoretical and methodological contributions to knowledge generated by the research. It also discusses some of the theoretical and policy considerations that result from these findings and presents some suggestions based on the preceding discussion for future research.
Chapter Two: Approaches to Adaptation and Adaptive Capacity.

Introduction

This chapter outlines the conceptual and theoretical framework used to guide the research. It also seeks to justify the Dominican Republic as the focus of the investigation. The chapter has eight sections.

Section one frames the debate by exploring the evolution of adaptation in research and policy. This is followed, in section two by an examination of the concept of adaptive capacity and its relationship to other central components of climate change research, namely vulnerability and resilience frameworks (see Engle 2011). Section three turns the focus to existing research on subjective adaptation and adaptive capacity. It presents five of the emerging approaches in this subject area but with a specific emphasis on place-based perspectives of relevance to this research. Section four breaks from the discussion of place-based perspectives on adaptive capacity to discuss the theoretical and conceptual roots of place-based research and its development in recent years. Despite also being a central topic of concern for human geography, the section justifies the use of an environmental psychological approach to place, based on the research aim to characterise the sense of place in the case study communities but also explore the behavioural implications in terms of adaptation and adaptive capacity. Section five defines the central concepts upon which the environmental psychology perspective heavily relies. This provides the necessary background for the discussion on existing research that adopts this approach to adaptive capacity presented in section six. Section six also discusses the locations in which sense of place and climate research has typically been carried out before making a case for the need to also consider urban poor adaptation in low income centres of the global South. Section seven expands on the Dominican Republic as the choice of contextual case study country within which the sense of place and adaptive capacities of urban poor residents may be examined. Finally, section
eight presents a conclusion to the chapter in which the gaps in the knowledge base identified throughout are drawn together.

2.1 Climate change adaptation.

This section traces the emergence and evolution of approaches to adaptation in research and policy in order to locate the debates in which the research is situated.

Since the recognition of climate change as an issue of serious concern in the 1980s, scientists from a range of disciplines have undertaken research to characterise the nature of the threat and make assessments of its likely current and future impacts (Grothmann and Patt 2005). At this point in time, there was a clear scientific ownership of the climate change debate at the international level. Climate change was framed as an 'abstract, global, future problem' (Gupta and van der Grijp 2010: 9) and as an object of scientific knowledge and environmental concern requiring scientific analysis (Cohen et al. 1998, Huq et al. 2006). Initial responses were framed in terms of the need for mitigation; which may be defined as those actions that aim to prevent and reduce the quantity of GHG emissions in the earth’s atmosphere (Gupta and van der Grijp 2010: 9).

Gradually, the advancement of knowledge and understanding relating to the lags present in the climate system, spurred the realisation that climate change impacts would inevitably be felt, regardless of attempts to mitigate GHG emissions (Fankhauser 1996). This led to an increasing focus being placed on climate change adaptation as a necessary response to climate change. Adaptation may be defined as; ‘the adjustments made by a system to moderate the impacts of climate change; to take advantages of new opportunities or to cope with the consequences’ (Adger et al. 2003: 192).

Despite greater attention being placed on the importance of adaptation these early approaches still framed it as a secondary, albeit complementary, measure aimed at supporting and furthering mitigation strategies. For
example Grothmann and Patt (2005: 199) outline the dominant thinking towards adaptation throughout the 1990s:

‘[b]y making certain assumptions about how people and societies will respond to climate change, and incorporating these responses in the assessment of damages, economists could more accurately compare the costs and benefits of particular mitigation policies.’

It seems as though there was a reluctance to fully embrace the notion of adaptation for fear that it was a somewhat defeatist option and that it may reduce faith in, or at least call into question mitigation as a necessary response to climate change (e.g. see Fankhauser 1996).

Increased input of social science and development specialists in the international climate debate helped to further shift the dominant framing of the climate change threat from a future, solely scientific focus, to a current international development issue that had begun to occur throughout the 1990s (Gupta and Vander Grijp 2010: 9-10). This, together with the manifestation of climate change impacts in a number of places, saw adaptation as a response to climate change increase in importance on the global stage. Adaptation came to be seen, not only as a means of supporting mitigation, but as a crucial measure for reducing the vulnerability of people to climate impacts (Grothmann and Patt 2005).

Adaptation can be anticipatory (ex-ante) and reactive (ex-post), and a distinction is also made between planned and autonomous adaptation (Prowse and Scott 2008). Planned adaption refers to those actions that are the result of a deliberate policy decision whereas autonomous adaption refers to spontaneous actions carried out by individuals, households or enterprises independent of the government (Smit et al. 2001 in Adger et al. 2003: 186, Satterthwaite et al. 2009a: 10).

Early approaches to adaptation were mostly anticipatory, planned and technological given their tendency to utilise climate modelling as a means to project future climate changes and the secondary impacts (Tanner and
Mitchell 2008). Specialists from specific areas of adaptation, (e.g. coastal management or agriculture) would complete impact assessments and identify particular strategies and policies in response (Grothmann and Patt 2005). Yet, this approach has been criticised for failing to account for the social determinants of a system’s vulnerability (e.g. Prowse and Scott 2008). These criticisms have resulted in greater support for an alternative bottom-up approach to adaptation which centres on the idea that, since people have been living with hazards for centuries, adaptation should build upon and provide support for, existing indigenous coping strategies developed over time (Huq and Reid 2007). The fundamental principles upon which these community-based approaches are founded are that; outside implementing agencies must build and maintain trust with communities whose participation is essential. It also holds that adaptation initiatives should be based on community experiences, perceptions and knowledge rather than solely on climate science (Prowse and Scott 2008, Swalheim and Dodman 2008). Given that often many of the vulnerabilities related to communities are a result of inadequate infrastructure and service provision which they cannot necessarily address of their own, support from higher levels for community-based adaptation is also fundamental (Swalheim and Dodman 2008, Satterthwaite et al. 2009b, Dodman and Mitlin 2011).

Understandably then, adaptation activities can vary significantly in type and scale. Although the specific actions are context dependent, Moser and Ekstrom (2010) present a type of adaptation spectrum that outlines the scope and scale of adaptation to climate change. At one end of the spectrum are coping measures which tend to be short term responses aimed at dealing with climate impacts and then returning to the status quo as rapidly as possible. As such these actions typically require little time and effort. Within the context of household responses and extreme and severe weather associated with climate change these actions may typically include raising or moving possessions to stop them from being damaged or sweeping water from housing. At the opposing end of the spectrum is system transformation. Transformation is a response to a climate stimulus which radically changes the fundamental attributes of a system (see also Pelling 2011a). Such actions
tend to be longer term and require more time and effort owing to their greater scale and magnitude. For example, transformational actions may include changes to livelihoods, the use of new technologies and relocation. Between the two lie those actions that go beyond the minimum coping responses and make alterations that allow a system to build and grow from a shock but without transforming it completely.

Not all adaptive strategies result in unquestionably positive outcomes, particularly where they take place on an ad hoc and unregulated basis (see Baker 2012: 55). For example, some autonomous strategies to cope with or respond to risks in the short term may actually have the result of shifting vulnerability from one group to another (Baker 2012: 55). In climate change research this is conceptualised as ‘maladaptation’ which refers to:

‘…action taken ostensibly to avoid or reduce vulnerability to climate change that impacts adversely on, or increases the vulnerability of other systems, sectors or social groups.’ (Barnett and O’Neill 2010: 211)

Successful adaptation to climate change is fundamentally shaped and influenced by a system’s adaptive capacity. The following section will explore the concept of adaptive capacity in relation to climate change adaptation.

2.2 Adaptive Capacity

Adaptive capacity refers to the capacity of system to enable adaptation, or adaptive responses to take place. Ultimately adaptive capacity allows individuals and groups to respond to climate stresses in ways that ensure that their daily activities and livelihoods are not critically altered or disrupted. From this perspective, adaptive capacity can be understood to mean ‘the ability of a system to respond to exposures and their effects so as to limit harm’ (Kasperson et al. 2002 in Yin et al. 2008: 89). It applies to systems at a range of scales, from the individual to the community and national levels (Dodman and Mitlin 2011, Dodman et al. 2013).
To date, adaptive capacity has been conceptually and methodologically rooted within either vulnerability or resilience frameworks. These conceptual frameworks have been the subject of continued research and debate with respect to particular definitions and also the relationships that exist between them (see Engle 2011 for a review). It has been suggested that the concept of adaptive capacity, which plays a similar role in both approaches may play an important role in bridging the two perspectives (Engle 2011). Although the scope of this research is not necessarily to seek consensus between these differing perspectives, the remainder of this section explores the role that adaptive capacity plays in vulnerability and resilience frameworks in order to situate this research project and outline how the concept is understood within it. The section then outlines the benefits, again in terms of this research, of adopting an adaptive capacity approach.

Adaptive capacity and vulnerability and resilience frameworks

The term vulnerability is used to refer to the degree to which a system is susceptible to, and unable to cope with, adverse effects of climate change (IPCC 2007b Dodman et al. 2015). Although rooted in hazard-risk research, vulnerability has been influenced conceptually by a range of disciplines including geography, development and political ecology (Eakin and Luers 2006, Engle 2011). Early hazard-risk approaches to vulnerability either focused on the system (e.g agriculture) or the specific hazard (e.g drought), whereas some recent approaches have sought to emphasise the social determinants of human vulnerability (e.g Schröter et al. 2005, Adger 2006, Engle 2011). For example the term ‘social vulnerability’ has been utilised by scholars of both geography and political ecology as a means of emphasizing the various socio-economic, demographic and political determinants and characteristics of people’s vulnerability (Adger 1999, Schröter et al. 2005).

In climate change research, vulnerability is understood to be a function of a system’s exposure, sensitivity and adaptive capacity (see McCarthy et al. 2001, Lankao and Qin 2011, Dodman et al. 2015). According to these classifications, ‘exposure’ refers to the nature and degree to which a hazard is experienced by a given system. ‘Sensitivity’ refers the degree to which a
system is affected by the hazard. Finally, as previously mentioned ‘adaptive capacity’ refers to the inherent ability possessed by a system to carry out actions to avoid losses or hasten recovery from a given hazard (Adger 2006, Gallopin 2006, Manuel-Navarette et al. 2007, Dodman et al. 2015). Adaptive capacity determines a system’s vulnerability by moderating both exposure and sensitivity (Adger et al. 2007, Engle 2011) as demonstrated in Figure 1 below. Adaptive capacity therefore, can be understood to be a desirable attribute for reducing overall vulnerability to environmental threats and shocks.

**Figure 1: Adaptive capacity’s impact on vulnerability.**

The idea that adaptive capacity is desirable attribute is also central to understanding the role that it plays in the resilience conceptual framework. Resilience has been variously defined and understood. For some, it refers to the capacity of a system to experience shocks while retaining essentially the same function, structure, feedbacks, and therefore identity (Walker et al. 2006, Nelson et al. 2007). Others extend the notion of resilience to include a system’s ability to recover in ways that also increase its capacity to withstand future shocks (Satterthwaite and Dodman 2013). In this sense, as Satterthwaite and Dodman (2013: 295) point out, resilience is increasingly drawing on ideas from within the disaster risk reduction literature on ‘building back better’. That is to say that resilience building should not only be;
‘…supporting a return to the previous state but also actively working to improve it, while simultaneously reducing the outcomes from slow- and rapid-onset disasters and climate change.’

Conceptually, resilience finds its origins in the ecological sciences and in mathematical modelling methodologies (e.g. Holling 1973, Folke 2006, Gallopin 2006) but has increasingly been applied to the interactions that take place between environmental and societal structures. Because of the heavy reliance and transformative impact that humans have on ecosystems (Folke 2006) resilience scholars emphasise the importance of researching the varied interactions between human and environmental systems together (Engle 2011). The unit of analysis at which such interactions are researched is commonly referred to as the ‘social-ecological system’ (SES) (Adger et al. 2005, Gallopin 2006, Walker et al. 2006). A resilience approach holds that SES’s possess thresholds that, when exceeded, lead to changes in function and structure. Where this occurs the system undergoes a ‘regime shift’. Such shifts may be reversible or irreversible or effectively irreversible meaning that they are not reversible within timeframes that are of interest to society to take effective action. The level of resilience possessed by a system relates to the level of disturbance that it can absorb without shifting into an alternate regime (Walker et al. 2006).

Adaptive capacity is recognised as playing an important role in increasing or decreasing resilience. While resilience is used to describe a system’s ability to absorb and respond to a particular stress, from within the resilience framework, adaptive capacity describes the system’s ability to increase the range of variability it possesses. Therefore, as within the vulnerability framework discussed previously, the more adaptive capacity possessed by the system, the more resilient it will be to environmental shocks (Engle 2011). In resilience frameworks adaptive capacity is essentially the human property of the system in that it describes the capacity that actors possess to be able to manage resilience (Walker et al. 2006). Unlike ecological systems, humans have the capacity and foresight to take action and facilitate interactions with the environmental components of a system. As such the adaptive capacity of
a system is mainly a function of the individuals or groups that are managing it (Walker et al. 2006, Engle 2011).

Engle (2011) points out a number or benefits in adopting an approach which focuses on adaptive capacity over one that focuses on either vulnerability or resilience. Firstly as discussed here, adaptive capacity is a familiar concept to both literatures and it is a property which they both view to be inherently positive. Indeed, as Engle (2011: 652) points out ‘a system simply cannot have too much of it and it is never described in negative terms’. Related to this notion, there may be more psychologically motivating outcomes from focusing on what a system does possess, through adaptive capacity, rather than highlighting what is lacking or on negative system traits as vulnerability assessments often do. Additionally, while vulnerability and resilience based approaches focus on environmental challenges and their solutions, assessments of adaptive capacity assessments centre on the ways in which those solutions may be achieved, such as the types of assets or capacities that may be built upon, in that sense adaptive capacity is relatively translatable to policy makers. Finally, and of particular interest here, adaptive capacity also has the potential to offer a more varied and wide ranging insight into the factors that may influence human responses to shocks by linking climate change adaptation literature to research which focuses on human motivation and socio-cognitive factors which will be discussed later in greater detail (e.g Grothman and Patt 2005, Brown and Westaway 2011).

Despite having clearly emerged as a central element of climate change research (e.g. Burton 1996, Smit and Wandel 2006, Nelson et al. 2007, Engle 2011) no universal agreement exists over the features or determinants of adaptive capacity. Furthermore, its latent nature makes it difficult to measure given that it is only activated as a response to a threat or an opportunity (Engle 2011). Nonetheless existing assessments of adaptive capacity have adopted a range of different techniques. Some have relied on the use of secondary data sources (e.g Adger 2006, Smit and Wandel 2006, Eriksen and Kelly 2007). Others however have made use of inductive theory type approaches (e.g Pelling et al. 2008), self-assessments (Brown et al. 2010) and also futures modelling (Bussey et al. 2012).
Despite the difficulties in measuring it, the assumption, and presumed consensus to date has been that objective factors; such as financial, technical, institutional and political constraints have a significant impact on adaptive capacity (e.g. IPCC 2001 in Yohe and Tol 2002, Adger et al. 2006, Nelson et al. 2007 Engle 2011). Nelson et al. (2007: 397) describe adaptive capacity as including ‘social characteristics and physical and economic elements’. At the individual level Adger (2003: 29) has stated that adaptive capacity ‘is a function of their access to resources’ (although later research suggests a widened focus (e.g. Adger et al. 2011). Similarly, at the national level Smit and Pilifosova (2001: 882) state that:

‘[the] determinants of adaptive capacity relate to the economic, social, institutional, and technological conditions that facilitate or constrain the development and deployment of adaptive measures.’

They list the determinants of adaptive capacity as being; economic resources, technology, information and skills, infrastructure, institutions and equity and argue that countries in which these factors are weak or lacking will have lowered adaptive capacity.

These determinants are all somewhat quantifiable and therefore are particularly useful and valued for their ability to support generalisations and policy formation. Indeed at the household and community levels for example, an objective approach to adaptation and adaptive capacity is undoubtedly valuable given its ability to highlight what people are potentially able to do given access to various objective assets (Fresque-Baxter and Armitage 2012). In that sense it provides an important means of identifying vulnerable groups or systems as well as their potential sources of resilience (e.g. Moser et al. 2010).

Yet while these factors undoubtedly remain important the concern is that they do not represent the entire picture (Frank et al. 2011). A solely objective approach risks implying that the possession of economic and material assets equates to the prioritisation or deployment of adaptive actions. What the objective approach is less able to do is account for motivations, that is to say,
what the factors may be that convert or fail to convert the potential and possible action into real and adaptive action.

Missing from these approaches is a subjective element which recognises the complexity of human behaviour and the potential existence of intangible determinants of, or barriers to, adaptation. These intangible factors such as people’s capacity to aspire (Appadurai 2004) and culture (Sen 2004) have long been recognised as being central to development. More recently, these and other intangible features including people’s perceptions, beliefs and values have been explored specifically in relation to the climate change context and have been found to influence the responses of individuals and groups to the phenomenon (Fresque-Baxter and Armitage 2012: 251, Grothmann and Patt 2005, Kuruppu and Liverman 2011). The subjective attributes of adaptation are undoubtedly more difficult to comprehend, measure and quantify than those associated with objective adaptive capacities. This perhaps accounts for why these subjective attributes have received comparatively less attention in both research and policy (Fresque Baxter and Armitage 2012) but which are gaining increasing recognition for their potential importance nonetheless.

A focus on the subjective determinants of adaptive capacity has the potential to explain why and how people adapt. This is something which is often missing from quantifiable approaches and a subjective approach therefore has significant potential to enrich the adaptation discourse. Subjective adaptive capacity focuses on what motivates people to take adaptive action. It rests on the assumption that whatever external pressures people are experiencing, they must ‘perceive a need, an ability and motivation to act’ (Frank et al. 2011: 66).

To date, it is possible to identify five interlinked conceptual approaches to subjective adaptation and adaptive capacity in the small but expanding literature in this area. These are, perceived climate risk, perceived adaptive capacity, values, culture and place-based, approaches. Each of these will be discussed.
2.3 Approaches to subjective adaptive capacity.

Perceived climate risk.

That risk perception, defined as the subjective judgments made by people about the characteristics and severity of a risk, plays a critical role in influencing human responses to actual or perceived environmental hazards and shocks has long been recognised (Kasperson et al. 1988, O’Connor et al. 1999). Within this field two dominant perspectives have emerged. The realist perspective is based on the assumption that there exists a ‘real’, objective risk. It is one that people are able to recognise, understand, and through cognitive processes make sense of. This process takes place in isolation from other social and cultural factors that may influence perceptions of risk (Slovic 2000, Johnson and Tversky 1983). Consequently the realist perspective assumes a direct causal relationship between the receipt of information and people’s subsequent risk perception (Sjöberg et al. 2004, Wachinger, Renn et al. 2013). Such perspectives tend to support the implementation of top down interventions for risk reduction. These focus on communicating risk information to at risk groups with the expectation that they will automatically engage in risk reduction behaviours as a result (World Bank 2012).

The main critique of the realist perspective comes from social constructivists who reject the idea that an individual’s cognitive ability to understand ‘real’ risk dictates their risk perception. Rather social constructivists posit that risk perception is socially constructed by factors including social norms, worldviews, values, personal experience and scientific or technical definitions (Slovic 2000, Leiserowitz 2006, Weber 2010). For social constructivists an individual’s perception of their risk is related to how they experience and understand the world based on their own socially constructed reality (Hopkins 2013). Furthermore, they argue that this risk perception is inherently linked to the individual’s characteristics (including factors such as gender, age and disability) because these characteristics fundamentally impact their experience of the social world as well as their place within it (Douglas 2013).
Whilst much research relating to risk perception focus on shocks in terms of natural and technological hazards (Tekeli-Yesil et al. 2010, Kellens et al. 2011, Bubeck et al. 2012), recently, a handful of studies highlighting the importance of cognition in climate change adaptation have widened the scope of analysis to explore the influence of risk perception on adaptive capacity (e.g. Grothmann and Patt 2005, Zaalberg et al. 2009). The need to include a consideration of cognitive factors such as risk perception in current debates surrounding adaptation and adaptive capacity is a central argument for Grothmann and Patt (2005). To illustrate their point, and adopting a somewhat social constructivist stance, they developed a socio-cognitive Model of Private Proactive Adaptation to Climate Change (MPPACC) within which risk perception and perceived adaptive capacity were the main variables. Their application of the MPPACC to their two case studies, (urban Germany in relation to flood risk and rural Zimbabwe in relation to the risk of drought) found that risk perception and perceived adaptive capacity provided a better explanation for adaptive behaviours in Germany than objective socio-economic factors and was even able to explain the failure to adapt in Zimbabwe. This suggesting that there is a real need to consider more fully, the psychological dimensions of adaptive capacities. Perceived adaptive capacity discussed here by Grothmann and Patt (2005) refers to the subjective thoughts on the individual’s actual capacity to adapt and represents the second approach to subjective adaptive capacities in the literature.

**Perceived adaptive capacity.**

People’s individual perceptions of their capacities to adapt are often overlooked in discussions on objective adaptation. This is the case despite the suggestion in research that perceived adaptive capacity is equally as important as objective capacity and can either enable or constrain adaptive behaviours (Grothmann and Patt 2005, Blennow and Persson 2009, Frank et al. 2011, Kuruppu and Liverman 2011). The IPCC (2007b: 735) acknowledges that perceptions of barriers to adaptation limit adaptive actions even when the capacity and resources to adapt exist. Research with extreme weather affected communities in Bangladesh and the Philippines where, for many, faith plays a fundamental role in everyday life highlights this idea. In some
communities, extreme weather events and the disasters that can often ensue were perceived among the inhabitants as unstoppable, uncontrollable ‘Acts of God’ and as such nothing could (or sometimes should) be done about their occurrence (Quarantelli 2000, Schmuck 2000, Bankoff 2004, Cardona 2004, Grothmann and Patt 2005). Where this outlook prevails, the perceived adaptive capacity tends to be low as control over the disaster is not thought to be in the hands of those facing the impacts. In such cases there is tendency for notions of fatalism to prevail among individuals and entire communities who regard the events as a deserved product of their own actions (Bankoff 2004).

Whilst these particular examples may be extreme and limited to a handful of case studies, the lesson that can be applied more widely is that adaptation is most likely to occur in places where people envisage climate change and its associated impacts as processes that people can affect (Frank et al. 2011, Kuruppu and Liverman 2011: 11). The notion that an individual’s perceived adaptive capacity considerably influences their actual adaptation measures, challenges the perception that adaptation is restricted only by economic, social and political factors (Blennnow and Persson 2009).

The previous two interlinked approaches have focused on adaptation in terms of cognitive perceptions of risk and efficacy. The following three, focus more on the role of symbolic values in motivating adaptive behaviour. The next section discusses values-based approaches to adaptive capacities.

Values-based approaches.

Values can be defined in a number of ways and have been used to refer to a range of concepts including interests, pleasures, likes, preferences, moral obligations, desires, wants, goals, needs, aversions and attractions (O’Brien 2009: 166). That said, while values have long featured in debates about climate change, the concept has been narrowly applied with definitions focusing on quantifiable determinants including ‘… monetary worth, relative worth, or a fair return on exchanges’ (O’Brien and Wolf 2010: 232).
The values-based approach to climate change adaptation, mostly developed by researchers O’Brien and Wolf (2010) seeks to challenge this dominant narrative. They push for recognition that economic assessments of the impacts of climate change and responses to it cannot possibly capture the significance of climate change in its entirety. Instead they argue that there are ‘...qualitative dimensions to climate change that are of importance to individuals and cultures’ (O’Brien and Wolf 2010: 235).

The values-based approach seeks to emphasise that factors such as beliefs and cultural identity shape the ways in which risks and impacts from climate variability are felt, perceived and subsequently acted upon (see Wolf et al. 2013: 4, O’Brien and Wolf 2010). From this perspective people’s vulnerability to climate change is not only related to their susceptibility to negative material outcomes caused by the changing environmental conditions, rather it relates to how these outcomes are differentially valued and how they influence people’s lives and well-being (O’Brien and Wolf: 2010).

The current dominant approaches to vulnerability and adaptation are not able to illuminate the importance of subjective values and how these values are being impacted by a changing climate, nor are they able to illuminate the goals that people may wish to pursue through adaptation (Wolf et al. 2013: 2). Indeed, central to the values-based approach is the notion that what people consider to be successful and legitimate adaptation is partially determined by what people consider to be worth preserving and achieving. These aspects in turn are dependent upon people’s underlying values and objectives (Wolf et al. 2013: 2, O’Brien and Wolf 2010). This suggests a high degree of subjectivity when it comes to climate change experiences and decision making processes. Indeed as O’Brien (2009: 170) has stated ‘[d]ifferent and dynamic values mean that climate change adaptations prioritised by some actors may not be considered as successful responses by others’.

The values based approach draws a number of parallels with and is closely related to the culture-based approaches to adaptation which will be discussed in the following section.
Culture-based approaches.

As with ‘values’ the concept of ‘culture’ has been variously defined and understood. In climate change research, McNeely and Lazarus (2014: 506) define it as ‘the full range of learned ideas and behavior patterns that are acquired, shared, and modified by people as members of a society’. Adger et al. (2013: 112) however, emphasise the material as well as the non-material factors and state that culture represents ‘the symbols that express meaning, including beliefs, rituals, art and stories that create collective outlooks and behaviours’.

There is increasing recognition that culture plays a central role in climate change adaptation (O’Riordan and Jordan 1999, Adger et al. 2013, Leonard et al. 2013, McNeely and Lazarus 2014). Cultural approaches rest on the assumption that individual and group ideas, behaviours and material and non-material symbols form the basis from which climate impacts are perceived and strategies to respond to them are shaped, developed and implemented.

Leonard et al. (2013) for example, examine the role that culture and knowledge play in relation to climate change adaptation among indigenous groups in North-West Australia. They show how the extensive traditional ecological knowledge, knowledge relating to the use of environmental resources and world views held by indigenous communities form an important part of their indigenous culture. These factors, in turn, strongly influence their perceptions of the scale, causes and effects of the changing environmental conditions and these, at times, differ with scientific explanations. Locally held ideas as to what the necessary and appropriate responses to the changing environmental conditions should be, are heavily influenced by these perceptions.

McNeely and Lazarus (2014) use Cultural Theory of Risk (CTR) as a means of understanding adaptation to climate change as a cultural process. CTR posits that risks and responses to them are framed according to four central yet competing worldviews relating to social organisation and nature. Firstly,
the egalitarian world view which places value on social solidarity and equality emphasises cooperation with decision making processes characterised by consensus among actors. From this perspective, nature is perceived as ‘fragile and in a precarious balance with society’ (McNeeley and Lazarus 2014: 509). Indigenous communities with a close connection to, respect for and dependence on the land, like those discussed by Leonard et al. (2013) or others in other remote locations often demonstrate this worldview (McNeeley and Lazarus: 2014).

In stark contrast, McNeeley and Lazarus (2014) also present the market, individualist world view which emphasises competition and individualism as key to market success. Nature is envisaged as benign and able to ‘auto-adjust’ to human activity to find its equilibrium. Climate is perceived as naturally variable and this natural variability is not able to be changed by humans. Corporate America is a system that often promotes this type of worldview. Somewhere between these two opposing views lies the hierarchist bureaucratic approach. Both nature and climate are envisaged as being manageable and tolerant to some human activity. Risks to the climate are not completely overlooked but it is accepted that there is the need to identify and understand tipping points to help better control the climate system (McNeeley and Lazarus 2014). Finally is the fatalist world view. For fatalists, nature and climate are fundamentally unpredictable and random. Fatalists tend to be among the more vulnerable and marginalised groups in society. They are often excluded from and or do not engage in climate decision making processes (McNeeley and Lazarus 2014).

These world views understandably have significantly different and obvious impacts on how climate change risks are framed by different groups. These framings in turn create discourses about the nature of the climate change risk and type of necessary responses to them in various forums. The CRT approach provides a means of understanding the climate change narratives and subsequently the promoted responses of different groups.
Whereas the previous two approaches have focused on world views, Adger et al. (2013), adopt a slightly different angle and one which emphasises the inseparable nature of culture and physical but meaningful locations. They posit that culture is inherently rooted in ‘places’ which they define as physical locations that have been given meaning by people. As climate change impacts on places, it has the potential to change cultures as well as the communities inhabiting and making use of that land, usually in undesirable ways.

The loss of access to certain places, such as small island states, caused by coastal inundation linked to climate change is a clear example of this. Where coastal inundation leads to the displacement of island populations from their homelands, it diminishes and endangers local cultures. The importance of the impacts felt by the inhabitants relates to the level of emotion and affect that they feel towards the land and their subsequent ability to migrate in search of alternative livelihood or living options. In this sense the cultural approach from Adger et al. (2013), is very closely linked to and, in fact, to a certain extent informs, the place-based perspectives on climate change adaptation and adaptive capacity. The place-based approach focuses on the interaction of these place meanings and climate change impacts as well as a system’s ability to respond to them and the types of strategies that may be adopted to do so (see Adger et al. 2011, Fresque-Baxter and Armitage 2012). This represents the fifth approach to subjective adaptation and adaptive capacity in the literature and is the one within which this research is situated. The following section will explore existing place-based approaches to climate change adaptation and adaptive capacities.

Place-based approaches.

Place-based perspectives on adaptation and adaptive capacity take, as a starting point, the notion that climate change will be felt most profoundly in places, and as stated above, often these places have some level of meaning attached to them by people associated with them (Adger et al. 2011, 2013). As Hess et al. (2008: 468) state:
In addition to location, place also has a different connotation: places are nested collections of human experience, locations with which people and communities have particular affective relationships. People’s ties to a place are deep, as is their fealty to traditions that facilitate survival there.

At the root of place-based approaches to climate change and adaptive capacity is the recognition that climate change has a potential to alter both the physical landscape and also the range of meanings, identities and emotional bonds that places encapsulate (Devine-Wright 2013: 64). It is the way in which people interpret and respond to such impacts and how such meanings may influence the responses adopted which is the focus of place-based approaches to subjective adaptive capacity (Mishra et al. 2010, Fresque Baxter and Armitage 2012).

The place-based perspective is currently conceptually and theoretically rooted within the discipline of environmental psychology. That said, the study of ‘place’ has also traditionally been a central topic of concern for geographers and there are a number of crossovers in the ways in which it is interpreted and understood in the two disciplines. Given the centrality of place and its associated concepts to this subjective adaptation approach these debates and perspectives will be expanded upon here before returning to justify the use of the environmental psychology lens in this research projects based on its central focus on the behavioural implications of place meaning.

2.4 Place in human geography

The study of place is central to geographic enquiry. Human geography understands places as being spaces to which people are attached, that have been given meaning by people, or, in other words, as meaningful locations (Cresswell 2004: 7).

Geography’s focus on places has developed in recent decades and this understanding of place as a meaningful location marks a distinct departure from that of earlier geographical perspectives. For example, early regional geographic approaches to place were overwhelmingly positivistic and
descriptive in their nature (Cresswell 2004). In as much as humans featured in discussions on place, they were reduced ‘to abstract points on a surface, whose behaviour could be mapped, modelled and predicted (Holloway and Hubbard 2001: 14) and thought of ‘as rational actors, rather than active, emotional or creative human beings’ (Holloway and Hubbard 2001: 12). Gradually, human geographers, growing increasingly critical of the positivist approach sought to challenge it by advocating for the placement of humans and the ways that they relate to and understand place at the centre of geographic place related enquiry (Holloway and Hubbard 2001: 14).

Human geography also emphasises the reciprocity that exists between people and places, expressed through the idea that ‘as people construct places, places construct people’ (Holloway and Hubbard 2001: 7). Within this idea of place, a degree of analytical inseparability of its social and spatial dimensions exists. Place, it has been suggested, refers to both geographical location and social status and related to that, implies a relationship between appropriate an inappropriate behaviours (e.g see Holloway and Hubbard 2001).

More specifically, place has been described as being formed of three key elements. These are location, locale, and sense of place (see Agnew 2005: 89). Location refers to an area where an activity or object is located. It is a ‘specific point in space with specific relations to other points in space’ (Cresswell 1996: 156). Cities or settlements may be typically thought of as locations. Locale refers to the settings where every activities are carried out and where social relations take place (Agnew 2005: 89). Examples of locales include houses, work places and churches. Finally is sense of place, or meaningful location. Sense of place, refers to the unique or subjective relationships that people have with places (Cresswell 2004: 7). It is this aspect of place that has received the most attention from human geographers in recent years as they increasingly encouraged the placement of humans in the centre of geographic place related enquiry. It is also the focus of place-based approaches to adaptive capacity from within environmental psychology as will be discussed later in this section.
A ‘basic dualism of space and place’ also characterises recent geographic thought (Cresswell 2004:10, Agnew 2005). Space has been described as being more ‘abstract’ (Cresswell 2004) and general, whereas place is particular (Tuan 1977, Agnew 2005). Cresswell (2004: 10) points out that unlike place, space lacks meaning. Space is a fact of life in the same way that time is a fact of life. Space is transformed into a place when humans assign meaning and become attached to it, a notion that will again be discussed later in the section. Cresswell (2004: 11-12) also emphasises the epistemological and ontological dimensions of place as well as the ways in which this relates to differential power dynamics and a potential for conflict. Place, he states, ‘is not just a thing in the world but a way of understanding the world’. Humans decide how to think about places as well as what aspects they choose to emphasise or designate as being unimportant. Place therefore can be a subjectively interpreted and experienced phenomenon. These subjective interpretations provide the conditions for the presence of differential power dynamics and the potential for conflict relating to divergent interpretations of, and experiences in, place. Different groups attach different meanings, uses and values to the same places and at times these may be conflicting (Holloway and Hubbard 2001). The need to accept that there exists a great diversity of meanings attached to place is a key idea for Massey (1991) who points out that even at the very local level of the community there is not one shared sense of place or identity. Rather, to the contrary, places possess multiple identities. This, she states may make them a source of richness and of conflict, or indeed a source of both.

Approaches to place in human geography

A number of broad and at times overlapping approaches to understanding place exist in human geography (e.g see Cresswell 2004: 51, Agnew 2005: 90-91). Firstly, descriptive perspectives emphasise the distinctiveness and particularity of places (Cresswell 2004: 51). This approach tends to be associated with the early regional geographic perspectives on place described earlier in which places are understood and described in purely physical terms. Secondly, a social constructivist approach views places as examples of underlying social processes. Social constructivists retain a focus on the
uniqueness and particularity of places. However they view these as examples of the wider processes which construct place in general under various underlying social conditions and unequal power relations. Such examples of unequal power relations may include capitalism, patriarchy or heterosexism for example (Cresswell 2004: 51). A third perspective may be conceptualised as neo-Marxist. This is perhaps best represented by the works of Lefebvre who focuses on the social production of spaces within which social life takes place, under capitalist conditions. Neomarxists push for the reclaiming, or decolonisation of places from such forces. Postmodern-feminist approaches, perhaps most famously represented by the works of Doreen Massey represent another strand of thinking on place in geography. Post-modern-feminist perspectives, as discussed briefly earlier, critique ‘grand’ interpretations that fail to recognise multiplicity, change and dislocation as key characteristics of place (e.g Massey 1991, Agnew 2005 90-91). Finally the phenomenological or sometimes conceptualised as the humanist approach (see Agnew 2005) is not concerned with the unique attributes of places or with the social forces that construct them which concern the other strands of thought. Rather phenomenologists seek to define human existence as being ‘in place’. The perspective is less concerned with places as such instead adopting a humanistic approach to ‘place’ as a fundamental way of being in the world. Humanistic geographers such as Relph and Tuan are amongst the most famous to have adopted the phenomenological approach to place (Cresswell 2004).

As previously mentioned the place-based approaches to adaptation and adaptive capacity are conceptually rooted in psychology’s sub discipline, environmental psychology. A multidisciplinary field of enquiry, environmental psychology’s approach to place draws on many of the same assumptions made by the different approaches from human geography though in general, the discipline tends not to acknowledge, or make explicit these links (Kitchin et al. 1997). Indeed, despite the shared concerns for human behaviour in physical environments a lack of collaboration and integration of geography and psychology and their associated disciplines has long been noted with the
two with the perspectives seeming to have developed largely in isolation of one another (e.g. see Kitchin et al. 1997).

Although it is not the aim, nor is it within the scope of this research to attempt to establish ways of reconciling how these two disciplines approach ‘place’, a number of obvious crossovers exist. For example, in relation to place, environmental psychology shares, and uses as a starting point, human geography’s most basic conceptualisation of place as a ‘meaningful location’ (Cresswell 2004). Like human geography, environmental psychology is characterised by a concern with the complex interplay between humans and their environments and the assumed reciprocity of people and places. In the same way that people define and construct places, environmental psychology also sees places as defining people, forming part of their overall identity (e.g. Proshansky 1978). More specifically however, environmental psychology is particularly concerned with exploring the characteristics of the types of relationships that exist between people and places and, importantly, understanding the behavioural implications and decision making processes that result from them (Steg et al. 2013), though such behavioural concerns have also been of interest to some geographers, even causing a certain level of internal conflict within the wider discipline of geography (see Kitchin et al. 1997).

It is exactly the importance of the behavioural focus which makes environmental psychology a particularly attractive lens through which to examine adaptive capacity. This, owing to its ability to highlight how place meaning can ignite, shape and influence specific behavioural responses to changes in environmental conditions.

Environmental psychology continues to adopt concepts developed by phenomenologists such as Tuan and Relph though now it offers a richer and more complex conceptual framework for capturing the variety of person-place relationships that are thought to exist. The following section will expand upon the different place related concepts and principles used by environmental psychology in order to describe such behaviours and interactions before
examining how environmental psychology has been used to inform the literature on the subjective dimensions of adaptive capacity to date.

2.5 Place-related concepts in environmental psychology

Within environmental psychology literature the terms, sense of community (Hummon 1992), sense of place (Shamai 1991, Jorgensen and Stedman 2001), rootedness (Tuan 1980) place attachment (Low and Altman 1992, Hidalgo and Hernández 2001), place identity (Proshansky 1978) and place dependence (Stokols and Shumaker 1981) have all been utilised, at times interchangeably, as a means of conceptualising the variety of ways that people relate to places (Hidalgo and Hernández 2001: 271). There is no consensus as to the exact meaning of and relationship between any of these existing concepts. Some research considers place attachment to be a component of place identity (Lalli 1992, Fresque-Baxter Armitage 2012), whereas others have conceptualised place attachment as the overarching construct within which place identity and dependence fall (Altman and Low 1992, Brown and Perkins 1992).

Jorgensen and Stedman (2001: 233) and others (e.g. Shamai 1991, Chamlee-Wright and Storr 2009) propose the use of the term ‘sense of place’ as the overarching construct to capture person-place relationships. The sense of place is defined as ‘a multidimensional construct comprising, the beliefs about the relationship between the self and place, feelings toward the place; and the behavioural exclusivity of the place in relation to alternatives’ (Jorgensen and Stedman, 2001: 233). This definition, which is much broader than that offered by human geography (see Cresswell 2004), encompasses three of the aforementioned, narrower concepts (attachment, identity and dependence) frequently utilised in the literature relating to place meaning (see Jorgensen and Stedman 2001, Shamai 1991). Each will be discussed.

Environmental psychologist Harold Proshansky (1978) first put forward the concept of place identity suggesting that individuals interact with the physical environment in ways that are important to their individual identities. He used place identity to refer to ‘those dimensions of self that define the individual’s
personal identity in relation to the physical environment...’ (Proshansky, 1978: 155). Proshansky suggested that places form part of each individual’s self-identity in the same way that other important determinants do, such as race and gender for example, but that it had been neglected in psychological research into identity formation (Proshansky et al. 1983). The concept has been subject to increased attention since Proshansky first aimed to highlight its importance, with researchers further emphasising its role in self-identity and investigating its development (Korpela 1989, Twigger-Ross and Uzzell 1996, Hidalgo and Hernandez 2001, Wester-Herber 2004). For example, Twigger-Ross and Uzzell (1996) have suggested that places support and develop aspects of people’s identity and this is evident through four key ‘principles’ originally suggested by Breakwell’s identity process model. These principles are self-esteem, self-efficacy, distinctiveness and continuity.

The principle of self-esteem highlights the ways in which places can enhance or indeed diminish feelings of self-worth. At the individual level, the self-esteem principle suggests that people seek out places to live that reflect their individual values and norms. It also states that they may arrange or modify the physical environment in ways that reflect and present personal identities. Korpela (1989: 245) suggests this process frequently manifests through the house:

‘..by installing and arranging furniture or by tending plants and so on, people project themselves onto the physical environment, which then conveys this image back to them and to other people.’

Such activities can serve to enhance well-being, strengthening the bonds between the individual and the physical setting and in doing so provides the individual with the type of positive feedback conducive to self-esteem enhancement (Wester-Herbert 2004: 112).

The second principle, self-efficacy, refers to individual assessments of personal agency and a person’s or a group’s belief in their ability to achieve certain goals or respond to different situations in a particular setting (Twigger-Ross and Uzzell 1996). Self-efficacy is maintained if a place facilitates or does
not hinder an individual’s chosen lifestyle. Factors such as crime, pollution, social tension and environmental risks can be seen as challenging self-efficacy (Wester-Herbert 2004).

The third principle is distinctiveness and refers to the ways in which people distinguish their own identity from that of others. Places can be used as a means of projecting a unique identity through design and modification processes. They can also be used to provide membership to a specific group (a country type person or a city type person for example) and such associations can, in turn, provide the individual or group with positive feelings and evoke positive emotions as a result (Twigger-Ross and Uzzell 1996). Distinctiveness often manifests as differentiation from ‘others’ and becomes particularly obvious when interacting with or describing them (Wester-Herbert 2004).

The final principle states that the self-identity requires a level of continuity which itself can be achieved through two non-mutually exclusive processes (Twigger-Ross and Uzzell 1996). The first is place-referent and relates to the ways in which places act as people’s referents to their past selves. Maintaining a link with these places provides people with a sense of continuity in their self-concept. For example, historical sites and monuments have been shown to provide continuity in national identity and memories of a particular location or landscape also serve to connect an individual to their past (Twigger-Ross and Uzzell 1996). Wester-Herbert (2004:112) points out that these links are often particularly important in contexts where individuals live and work on the same land as generations of relatives have done before them.

The second dimension of the continuity principle is place-congruent. It refers instead to the ways in which people maintain links to the more generic and transferable characteristics of a place. People may seek out or modify environments in ways that are more congruent with their perceived self-identity (Twigger-Ross and Uzzell 1996). Research has suggested that not having control over the principle of continuity because of the loss or degradation of the environmental landscape can have serious implications for
health and well-being, even leading to feelings of grief and loss (Twigger-Ross and Uzzell 1996, Cunsolo-Willox et al. 2012).

Having defined the concept of place identity the following section will explore the second dimension of the sense of place, place attachment.

Place attachment, perhaps the most researched dimension of the sense of place, may be defined as ‘the cognitive and emotional link of an individual to a particular setting or environment’ (Low 1992: 165). In general, place attachment is used to refer to the cognitive, affective bond that people develop with places, a bond to which emotion and feeling are central (Low and Altman 1992). Place attachment research focuses on ‘loved’ places (Cooper Marcus 1992), feelings of happiness towards and fondness for places (Chawla 1992), feelings of belonging, emotional embeddedness and feelings of security in place (Brown and Perkins 1992). There has traditionally been a tendency to focus on positive emotions and frame place attachment as an entirely positive bond (e.g. Hidalgo and Hernández 2001, Jorgensen and Stedman 2001), this perhaps as a result of the use of the term ‘attachment’ which makes an understanding the role of negative or ambivalent feelings more difficult to comprehend (Manzo 2005).

In response, some have called for and encouraged a broadening of understandings of place attachments to consider the full range of emotions and experiences that make places significant thereby challenging the dominant framing (e.g. Seamon 1979, Ahrentzen 1992, Chawla 1992, Manzo 2005). For example as Manzo (2005 81-82) states:

‘…[a] host of experiences, both positive and negative, dramatic and mundane occur in a variety of places and constitute our lifeworld. The experiences which people find important and meaningful often lead to significant bonds with the places in which these experiences occur- for better or worse’ (Manzo 2005: 81-82).

Place attachment is impacted by aspects such as local social ties and relations. Family, friends and community members often are thought to form important aspects of a person’s attachment to place (Hidalgo and Hernández
Dahl and Sorensen (2010) explore the role of financial and social factors in influencing social mobility among Danish nationals and conclude that relationships with family and friends are the most influential aspects of people’s attachment to place and decisions about where to live. Low and Altman (1992: 7) similarly emphasise the importance of social relationships in place attachment, describing places as:

‘repositories and contexts within which interpersonal, community and cultural relationships occur, and it is to those social relationships, not just to place qua place, to which people are attached’.

In addition to these social elements, a range of other socio-demographic factors are thought to influence the strength and development of place attachment. These include aspects such as age, length of residence, social cohesion (Livingston et al. 2008, Lewicka 2010) social class and homeownership (Hidalgo and Hernández 2001) as well as physical aspects such as landscape characteristics and aesthetics (Lewicka 2011).

Agyeman et al. (2009: 512) suggest that while individuals and groups construct attachments with places they may also have the capacity to dismantle them, yet comparatively less is known about this process. They have conceptualised this process as ‘place detachment’. Writing in the context of the managed retreat of inhabitants from areas becoming increasingly uninhabitable because of climate change impacts, they describe ‘place detachment’ as the process:

‘...whereby individuals and groups anticipate and negotiate the negative future consequences of remaining in a place by intentionally loosening existing attachments and forming new ones elsewhere’.

They argue that in an era of global climate change it will be valuable to better understand this process, as well as how policy interventions can foster it among populations that may need to undergo managed retreat from vulnerable locations.
The final dimension of the sense of place concept, place dependence, describes whether a person feels as though their needs and desires can be satisfied in a particular place compared to other places (see Stokols and Shumaker 1981). Certain areas are uniquely suited to certain types of activities and therefore will be valued for that purpose (White et al. 2008). For example in a recreational context, White et al. (2008) point out that a white water rafter can only achieve their preferred goals and activities on rivers with rapids. If a specific location is considered to be more suitable for a given activity than other alternative options, place dependence is thought to be to be greater and an individual is more likely to want to remain there (Anton and Lawrence 2014: 452). As with place attachment. Place dependence may not only be based on positive emotions, as Jorgensen and Stedman (2001: 234) state:

‘[Place dependence] involves a comparison of the current outcomes to those that would be obtained by selecting an alternative course of action. Each option may be negative; the chosen option may simply be the best among poor alternatives. Thus, place dependence concerns how well a setting serves goal achievement given an existing range of alternatives.’

Despite sometimes being considered a construct of place attachment (Scannell and Gilford 2010) place dependence differs from attachment in that dependence is a functional whereas attachment represents an emotional evaluation of a place. The strength of the connection that a person holds with the location is based on specific behavioural goals, rather than on the strength of an affective and emotional bond held towards it (Jorgensen and Stedman 2001).

Where sense of place is used as an overall construct as per the approach adopted by, as Jorgensen and Stedman (2001: 233), place attachment, identity and dependence are all indicators and dimensions of an overall sense of place. Jorgensen and Stedman (2001: 238) represent this idea in their ‘Three Factor Model’ (see Figure 2). In the model, each component, i.e. attachment, identity and dependence, is treated as a distinct construct although correlations between the factors can and often do exist.
The benefit of this approach, over one that assumes that one construct subsumes another, is that it accepts that each dimension may be present yet differs between individuals. Conceptual approaches which use place attachment or identity as the overarching construct (e.g. Fresque-Baxter and Armitage 2012) are seen as having limited applicability in certain contexts because they assume that to identify with a place then a person must also be attached to it or that being attached to a place automatically makes that place part of a person’s overall identity (see Hernández et al. 2007). Factors such as global, regional or even urban mobility could potentially challenge this assumption. For example, Hernández et al. (2007) argue that whilst place attachment and identity frequently overlap, they are two different ways of relating to places. They arrived at this conclusion via a comparison of feelings of place attachment and identity among natives and non-natives in Spain’s Canary Islands, and found that while attachment and identity may coincide in natives, in the case of non-natives attachment was found to develop before identity. The implication here is that while non-natives may feel an affective bond to the area in which they currently reside, they may still identify with their native city, region or country. These two sentiments are separate but can exist at the same time and this consideration is particularly important when considering the heterogeneity of many settlements the world over. Ultimately this highlights the benefit of conceptualising the relationships that people have with places as a sense of place under the ‘Three Factor Model’.

**Figure 2: Three Factor Model**

Source: Author's adaptation of Jorgensen and Steadman 2001: 238.
Having established and defined the fundamental concepts upon which place-based approaches to subjective adaptation and adaptive capacity rely, the following section will explore existing research which incorporates the sense of place into understandings of adaptive capacity.

2.6 A place-based approach to adaptive capacity

Fresque-Baxter and Armitage (2012) are perhaps the first to present an extensive framework that explicitly presents a theoretical understanding of the contribution that sense of place makes to the subjective climate change adaptation discourse. They utilise ‘place identity’ as an overarching term to capture the relationships between people and places and consider place attachment to be the most important construct of place identity.

Their place identity approach is comprised of three interconnected perspectives which contribute to an overall understanding of how place identity interacts with climate change adaptation measures at individual and collective levels. Firstly is the cognitive action approach which examines the ways in which place identity may influence decision making processes from risk perception to intention and action (Fresque Baxter and Armitage 2012: 261) The cognitive approach is closely linked to the perceived climate risk and perceived adaptive capacity perspectives discussed earlier.

Secondly is the health and well-being perspective which emphasises the importance of place-relationships to the overall health of individuals and groups. This approach states that, where place relationships are strong, psychological well-being and subsequently adaptive capacity are thought to be increased. Conversely, having a negative sense of place, as can be caused by deteriorating local environments, can also cause overall well-being to deteriorate leading to feelings such as stress, displacement and marginalisation. This in turn can result in decreased self-esteem, lowered self-efficacy and avoidance of the situation. These feelings, they suggest, can act as barriers to effective adaptation.
Finally, the collective action approach focuses on the role that place identity plays in shaping collective values. It explores the opportunities for, or barriers to, collective adaptation based around common or opposing understandings of place.

The strength of the theoretical approach outlined by Fresque-Baxter and Armitage (2012) is that it draws together a range of ways in which climate change and the sense of place could potentially interact with adaptive capacities on a generalised basis. It does so based on what existing environmental psychology theory and research states about human behaviour in response to various phenomena in different contexts discussed in greater detail later in this section. However, as the researchers themselves highlight, their own research remains theoretical and rooted in conceptual thinking and requires application in a real life context to examine some of the assumptions that are made. This is particularly important given the context specific nature of the climate change threat and the diversity in people’s climate change experiences the world over.

Place-based approaches to climate change adaptive capacity such as this one presented by Fresque-Baxter and Armitage (2012) draw some parallels with existing, related bodies of literature which have examined the relationship between the sense of place and environmental changes (Stedman 2001) as well as global issues such as climate change (Hess et al. 2008, Cunsolo-Willox et al. 2012), and disasters (e.g. Brown and Perkins 1992, Chamlee-Wright and Storr 2009), particularly those resulting from hydro-meteorological events and conflict. And while not all of this research has made explicit the potential relationship between the sense of place and adaptive capacity, it has helped to open a dialogue about how the two factors may interact in various contexts.

Disasters, and extreme weather, for example have been found to have varied impacts on the sense of place. Often in the case of disasters and extreme weather the alteration to the sense of place is abrupt, reflecting the sudden nature of the event. Some studies find that disasters disrupt, and have a
negative impact on people’s sense of place. Once familiar locations become
unrecognisable and the symbolic memories or sense of security that these
places once provided are removed and consequently people become
detached from them (Brown and Perkins 1992, Miller and Rivera 2010).
Others have found that large events can intensify the emotional significance
that places have for people as the change allows for unconscious meanings
and significance that people had previously associated with a location to
emerge (Chamlee-Wright and Storr 2009, Milligan 1998).

In relation to the slower, more incremental changes associated with climate
change, the impacts to the sense of place are thought to be more insidious
reflecting the gradual nature of the changes taking place. Some research has
focused on the way that the changing environmental conditions impact on
traditional forms of land use and symbolic meanings attached to the
landscape as well as the negative health and well-being outcomes that such
changes can produce (e.g. Cunsolo-Willcox et al. 2012). Others have drawn
attention to the ways in which subjective factors such as meaning and identity
have, to date, been underrepresented in approaches to climate change
decision making (Adger et al. 2011).

The most recent focus of much of this sense of place and environmental
threat research has been on natural environments and indigenous populations
in places that have, in many ways come to symbolize the climate change
threat and where the changing environmental conditions risk causing the
forcible displacement of the affected population. These include the Arctic
Regions (e.g. Hess et al. 2008, Adger et al. 2011, 2013, Cunsolo-Willox et al.
2012) and Pacific small island atoll nations (e.g. Adger et al. 2011, 2013) due
to their significant and immediate risk from climate change impacts associated
with melting ice and sea level rise respectively (see Wolf et al. 2013). The
indigenous people inhabiting such areas tend to have an intimate relationship
to the ecological landscape which is being eroded. The land usually provides
these groups with the resources necessary to sustain life in what are often
remote environments, whilst being integral to the process of passing their
unique traditions and cultural identities through the generations. As the land
changes, and even becomes increasingly uninhabitable through the negative
effects of climate change, it can have quite profound impacts on the cultural
heritage, health and wellbeing experienced by the inhabitants (Cunsolo-Willox
et al. 2012).

This literature has informed the international policy focus on the interaction of
the sense of place with climate change. For example, it has been used to
inform recent IPCC documentation and has led to the Impacts to the sense of
place caused by climate change being recognised in the 2014 Working Group
II contribution to the Fifth Assessment Report of the IPCC as a ‘key risk’
(IPCC 2014: 59). The IPCC documentation similarly categorises damage to
the sense of place caused by climate change as a cultural impact (IPCC
2014: 72-73). Reflecting the existing research, they frame it within the context
of displacement and migration stating that it is a trade-off associated with the
forced movement away from increasingly uninhabitable rural coastal zones,
an issue that they consider to be particularly pertinent to indigenous
populations.

The incorporation of these impacts into international policy is certainly a
positive step towards increasing the profile of the intangible impacts of climate
change among those facing its impacts most profoundly. However, to date,
the framing of the debate in terms of displacement and the impacts to the
sense of place in terms of indigenous culture and health remains somewhat
narrow.

On the one hand, it does have practical benefits in that it encourages a sense
of urgency of response. It also establishes potential institutional homes to
identify who would be charged with the responsibility of monitoring and
researching the interaction of the sense of place and climate change and for
promoting its inclusion in approaches to climate change adaptation in various
contexts. Yet, on the other framing the impacts to the sense of place in terms
of displacement overlooks the ways in which the range of other impacts
associated with climate change, which may not necessarily result in or require
transformational adaptation measures to be implemented are interacting with
the sense of place. Furthermore, a framing of the debate in terms of
indigenous culture and incremental change leaves little scope to consider how degradation of other environments affects inhabitants that are invested in such places, but where displacement is not the only remaining coping response option.

The body of literature which has informed the debate has typically been more heavily weighted towards an impact focused approach, emphasising the unidirectional relationship between disaster or climate change’s effect on the sense of place (Brown and Perkins 1992, Cunsolo-Willcox et al. 2012, Adger et al. 2013) and the resultant consequences of that for issues such as people’s health and wellbeing (e.g. Hess et al. 2008, Cunsolo-Willcox et al. 2012) and on cultural heritage (e.g. Adger 2011, 2013, Cunsolo-Willcox et al. 2012).

Adopting a place-based approach to adaptation and adaptive capacity suggests moving beyond the completion of sense of place impact assessments to incorporate a consideration of and emphasise what the implications of person-place relationships are for people’s abilities to respond to climate impacts in different contexts (Mishra et al. 2010, Fresque Baxter and Armitage 2012). Indeed some existing research in other settings has shown that that the sense of place can positively impact community recovery following large-scale disasters (Chamlee-Wright and Storr 2009) and existing environmental psychology research has demonstrated that a strong and positive sense of place can increase willingness to engage in place protective behaviours when such places come under threat (e.g. Stedman 2001). Yet such important interactions risk being overlooked if the debate is framed only in terms of the potential impact to the sense of place.

The current framing is likely to be a result the infancy of the subject area and subsequent lack of research in similar and differing contexts. The case of small island states, which have been used to shape the debate, highlights the potential for variation even within similar contexts well. SIDS share a number of common features that increase their vulnerability to climate change. They often have limited natural resources, with many already heavily stressed from
unsustainable human activities. SIDS tend to possess a higher concentration of population, socio-economic activities, and infrastructure along their coastal zones. They are often highly dependent on water resources for freshwater supply which are in turn highly sensitive to sea-level change. SIDS are, at times, geographically isolated and their subsequent greater distances to major markets affects their trade competitiveness. They often possess extreme openness of small economies and high sensitivity to external shocks. They have generally high population densities and in some cases high population growth rates. Their infrastructure in most sectors is often inadequate and their limited physical size effectively eliminates some adaptation options to climate change. Insufficient financial, technical and institutional capacities, seriously limits the capacity of SIDS to mitigate and adapt to any adverse impacts of climate change. Finally, of particular importance for this study, SIDS have high susceptibility to intense hurricanes and to associated storm surge, droughts, tsunamis and volcanic eruptions (United Nations Framework Convention on Climate Change (UNFCCC 2005: 14).

Yet despite these common characteristics, SIDS are by no means a homogenous group. Not only do they vary by geography but also in their physical, climatic, social, political, cultural, and ethnic character; as well as in their stages of economic development (Nurse and Sem 2001: 847). As such the challenges and impacts faced by the likes of the small island atoll nations whose experiences have helped shape the debate will inevitably be different from other larger SIDS with different characteristics. As of yet however, research of this nature has not been carried out in other small island settings which fails to paint the fuller picture of how these phenomena interact in such similar yet varied contexts.

Urban environments in developing countries represent another location equally becoming recognised as being at the forefront of the climate debate but which have not yet been the focus of such research and which could significantly enrich the debate. A focus on adaptation and adaptive capacities of urban residents, in relation to cities of the global South is particularly important when considering that over 50 per cent of the world's population
now live in areas classified as urban, a percentage that is expected to increase significantly in coming years, particularly in cities of the global South (UNHABITAT 2010). Within these growing populations it is the urban poor who face some of the greatest exposure to climate change and disaster impacts. For these groups, the combination of population concentration, poverty, inadequate infrastructure, limited access to services and limited capacities within local governments has meant increased exposure to environmental and disaster-related risk (Fan 2012: 64, Dodman et al. 2015).

To date the focus in the urban environment has predominantly been on the objective, often material, financial, technological and institutional determinants of vulnerability and adaptive capacity of the urban poor (e.g. Moser and Satterthwaite 2008, Moser et al. 2010, Stein and Moser 2014). Such research has increased the profile of this group, sometimes engaging directly with urban poor communities to better understand and identify their needs, priorities, perspectives and responses in relation to climate impacts (e.g. Moser et al. 2010, Dodman et al. 2015). They have also been instrumental in attempts to encourage the use of these local perspectives and realities which are so often left out of approaches to adaptation in the urban environment.

While some of this research has acknowledged the potential for intangible losses caused by climate change, such as cultural heritage for example (e.g. Awuor et al. 2009), the influence that these intangible and often subjective values have in the adaptive capacity of such groups in urban centres of the global South, or the ways in which such values are being impacted by disasters and severe weather associated with climate change has not yet been the subject of focus in such research.

As mentioned existing research in the field of urban studies suggest that the sense of place can be a source of community rebound and recovery in low-income urban communities following disasters but having been completed in New Orleans following hurricane Katrina, this lacks a developing country focus (Chamlee-Wright and Storr 2009). While some environmental psychology research has addressed this by focusing on a developing country,
and suggesting that attachment to place can impact on flood preparedness, such research has been carried out in the rural setting (Mishra et al. 2010).

2.7 The Dominican Republic: A case study

With its highly urbanised population, exposure and vulnerability to climatic hazards and extremes, and SIDS status, the Dominican Republic represents fertile ground to explore the sense of place and urban poor adaptation and adaptive capacity. The country is part of the most urbanised region in the world. Almost 80 per cent of the population of Latin America and the Caribbean region (LAC) live in cities, a proportion even higher than the group of most developed countries (United Nations Human Settlements Programme (UNHABITAT) 2012: 17).

In the Dominican Republic, the transition from a rural nation to an urban society occurred throughout the twentieth century. Although the precise figures relating to urbanisation rates differ between sources, as can be seen in Figure 3, the process commenced in the 1920s and 1930s, when the Trujillo dictatorship concentrated political power in the capital and began to construct and reshape it as a monument to the modern might of his regime (Hoffnung-Garskof 2008:1). However the urbanization process really sped up after the 1950’s increasing the urban population from around 23.7 per cent of the total population in the 1950s to around 62.4 per cent in 2000 (Hoffnung-Garskof 2008: 1). Such growth was most likely to have been spurred on through the 1970s by the shift in the country’s industry from being predominantly reliant on the agricultural sector and the sugar and tobacco industries, towards, more urban based service industries including construction, manufacturing and tourism thereby increasing rates of rural to urban migration (Dunn 2009, IFRC 2012). This was followed in the 1980’s by a period of economic crisis in which the state focused public investment in urban areas, again serving to increase rural to urban population movements within the country (United Nations Development Programme (UNDP) 2008: 45). As of the 1990’s urban growth rates in some cities are also likely to have been impacted, to a certain, albeit somewhat unmeasurable extent, by changes in the type of movements among Haitian migrants.
Haitians have been migrating to work in the Dominican Republic for over a century. Throughout the 20th Century they are known to have travelled at times voluntarily, at times by force, to work on Dominican sugar plantations during which time they resided in sugar cane labour settlements known as bateys (Petrozziello 2012). No definitive data outlining the exact quantities of Haitians migrating into or residing in the Dominican Republic at any one time actually exists. Estimations vary significantly from 500,000 to over 1.5 million depending on the time and the source and are often thought to be somewhat ideologically motivated, particularly when they come from Dominican nationalists opposed to Haitian migration (Ferguson 2003: 8). This anti-Haitian sentiment, and notions of Dominican nationalism played out through race, class and ethnicity (Howard 2001) will be expanded upon in Chapter Three. However, the point it here that by the 1990s and as a result of the country’s decreasing dependence on the sugar industry, Haitian migrants were no longer confined strictly to living and working in bateys as they previously had been. The new, increasingly mobile Haitian migrants have gradually spread out in the search of work in urban areas such as construction, informal sector employment, tourism and domestic work, (Petrozziello 2012).

Figure 3 Percentage of the urban population taken from censuses 1920-2010

![Graph showing percentage of urban population 1920-2010]


Recent data relating to urban population growth is scarce, but estimates from 2012 state that the Dominican Republic has a population of 10.2 million, with
69.2 per cent of the total population currently living in urban areas. That said, projections indicate that both of these figures will increase substantially in the next two decades (IFRC 2012: 21-22). Though data and projections outlining the country’s urban growth usually fail to account for and differentiate between types, it is reasonable to assume that not all past, present or future growth has occurred or is likely to occur as a result of rural to urban or international migration. A number of researchers have pointed out that while urban growth usually tends to be attributed to rural-urban migration, evidence suggests most growth to be as a result of natural population increase. This may be defined as the net excess of births over deaths in urban areas (see Tacoli 2009:514). Indeed, Pelling (2003: 21) points out that globally, around 60% of urban population increase is actually a result of this natural growth with migration only counting for a comparatively smaller percentage, as little as 34% in the Latin American region.

Generally speaking it is expected that the vast majority of future growth predicted to occur in developing countries will do so in smaller towns and secondary cities (Moser et al. 2010). Traditionally countries within the Latin American and Caribbean region have been characterised by the concentration of their population in a handful of cities. These have tended monopolise the wealth, income, socio-economic and administrative functions, as well as the political capital in most cases (UNHABITAT 2012: 25). However, in recent years there has been increased growth in the populations of smaller urban centres and a number of countries have witnessed the growth in importance of secondary and intermediary cities (UNHABITAT 2012: 25). This is certainly the case for the Dominican Republic where the growth of several of its cities has been described as ‘explosive’. This was particularly the case during the 1980’s, driven by the aforementioned growth of the manufacturing and tourism industries which tend to be concentrated in these areas (Portes et al. 1994: 13).

The Dominican Republic is part of the world’s most disaster prone island group known as the Greater Antilles (see Pelling and Uitto 2001: 50) and in the period 1995 – 2014, ranked eleventh in the Global Climate Risk Index
(CRI) of most extreme weather affected countries (see Kreft et al. 2015). In addition to its SIDS status, in part, the vulnerability of the Dominican Republic to a wide range of hydrometeorological weather events and hazards can be attributed to its geographical location. Geographically the country is situated in the middle of the hurricane belt of the Atlantic and Caribbean oceans. Consequently it is exposed to severe tropical storms and hydrometeorological hazards between August and November, although it has been noted that events are ‘even more frequently occurring from as early as June and as late as December’ (IFRC 2012: 18). The main hurricane routes enter from the south or east making the high impact zones the coastal areas in the south-east and south-west coasts (shown in Figure 4 in yellow), followed by a medium-impact zone along coastal areas to the north (shown in Figure 4 in brown) and finally a low-impact zone in the centre of the country (shown in Figure 4 in white) as storms weaken overland (IFRC 2012: 17 see also Herrera-Moreno and Orrego Ocampo 2011: 42).

**Figure 4: Zones exposed to hurricanes and tropical storms.**

Source: Herrera-Moreno and Orrego Ocampo 2011: 42.

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1 It is acknowledged that the country is also located in one of the most seismically active regions in the -hemisphere meaning that it is also exposed to a variety of geophysical hazards however as the focus of this research is on the hydrometeorological hazards that are frequently associated with a changing climate these geophysical hazards are not addressed within this research.
In addition to hurricanes and tropical storms, the main natural hazards affecting the country are droughts, heat waves, lightning, landslides, floods, dams bursting and forest fires (Dunn 2009: 3, IFRC 2012: 17). Of these phenomena, tropical storms, flooding and landslide events pose the most serious risk to many in the Dominican Republic during the rainy season which typically lasts from May to November. The most vulnerable and exposed regions to flooding are thought to be the provinces of San Pedro de Macorís, Santo Domingo, Distrito Nacional, San Cristóbal and Santiago (Herrera-Moreno and Orrego Ocampo 2011: 49), particularly those areas located within the river basins of the Yaque del Norte, Yaque del Sur, Yuna y Soco rivers and also the marginalised settlements on the banks of the rivers within the capital and secondary cities of Santo Domingo and Santiago respectively (Herrera-Moreno and Orrego Ocampo 2011: 12). However the IFRC (2012) warns that flood events are not only limited to the rainy season and instead occur throughout the year with around half taking place outside of the rainy season and unrelated to tropical storm activity.

Despite there being an emphasis on the country’s exposure and vulnerability to high profile disaster events in policy and research (Medeiros et al. 2011), in their study on disaster threat and risk in the Dominican Republic, Meyreles and Ruíz (2011) conclude that flooding is actually the greatest threat to the country followed by hurricane risk. The report considers hurricanes to be the second greatest threat, not because of their frequency but rather because of the potential that they have when they do occur to cause extreme damage, loss of life and trauma (Meyreles and Ruíz 2011: 60). Similarly, humanitarian agency DARA (2010: 194), have found that flooding is becoming noticeably more widespread and severe with climate change and that it accounts for the majority of climate related extreme weather damages affecting the country. In addition to flooding, moderate and heavy rain in the country’s mountainous and hilly areas leads to frequent landslides, especially in deforested areas (IFRC 2012).
The evidence of the impacts of just a selection of tropical storms, hurricanes and flooding from the period 2003 - 2012 (summarised in Table 1) highlights the risk of hurricanes, storms and floods throughout the country.

**Table 1: Selection of extreme weather events and disasters 2003-2012.**

<table>
<thead>
<tr>
<th>Event</th>
<th>Year</th>
<th>Main areas affected</th>
<th>Impacts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Floods/Dam break</td>
<td>2003</td>
<td>Sabana Iglesia, Santiago</td>
<td>Evacuation of 47,270 people. US$ 49,300,000 in damages.</td>
</tr>
<tr>
<td>Hurricane Ivan</td>
<td>2004</td>
<td>South coast</td>
<td>4 deaths.</td>
</tr>
<tr>
<td>Hurricane Jeanne</td>
<td>2004</td>
<td>East coast</td>
<td>Major flooding. US$ 331,500,000 in damages. Between 8 and 19 deaths.</td>
</tr>
<tr>
<td>Hurricane Noel</td>
<td>2007</td>
<td>South west coast</td>
<td>Over 6 million people affected. 87 deaths. 34,172 people displaced.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Damages worth US$ 439,000,000,000.</td>
</tr>
<tr>
<td>Tropical Storm Olga</td>
<td>2007</td>
<td>East coast and Santiago province</td>
<td>Losses of US$105 million.</td>
</tr>
<tr>
<td>Tropical Storm Fay</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Hurricane Gustav</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Hurricane Hanna</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Hurricane Ike</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hurricane Isaac</td>
<td>2012</td>
<td>South coast</td>
<td>5 deaths. 26,000 people evacuated. 5,000 dwellings damaged. 116 villages and communities isolated. 2,500 makeshift shacks of urban poor residents in Santo Domingo flooded.</td>
</tr>
</tbody>
</table>


What stands out from this particular analysis and indeed a review of the wider literature relating to climate change and disasters in the Dominican Republic is that the impacts of these events are almost always discussed in terms of their overall national or regional impacts and there is little by way of information on how the disaster events are impacting upon specific spatial locations within these regions, particularly urban settings. Perhaps in a bid to
challenge this lack of focus on city level impacts, in recent years a handful of studies have started to make calls for greater attention to be paid to the impacts of disasters and severe weather in urban settings across the country or at least highlight the urban impacts of such events (see Gómez de Travesedo and Saenz Ramírez 2009, Herrera-Moreno and Orrego Ocampo 2011, Meyreles and Ruíz 2011). For example Herrera-Moreno and Orrego Ocampo (2011) report that although there is no quantitative evaluation of dwellings at risk, urban centres concentrate a high quantity of the population living at greatest risk of disaster in the country. Similarly Gómez de Travesedo and Saenz Ramírez (2009: 58) state that between 1966 and 2000 almost 46 per cent of registered floods were concentrated in the urban zones of the National District, Santiago de los Caballeros, Concepción de la Vega, Bonao y Boca, Cotui, Nagua y San Francisco de Macorís. The rest were found to have been spread-out across the whole country with a high incidence in rural zones too. Nonetheless, the report states that the total number of registered floods in rural areas was found to be significantly fewer than in urban areas. More recent data tells a similar story. For example Meyreles and Ruíz (2011: 12) show that in 2010 57.3 per cent of registered disasters occurred in urban areas whereas 36.4 per cent occurred in rural areas (it was not possible to establish where the remaining 6.3 per cent had occurred). Specifically in relation to flooding, as much as 69 per cent of flood events occurred in urban areas and 25 per cent in rural areas (it was not possible to tell where the remaining 6 per cent had occurred). The authors note that this radical increase in urban disasters, particularly flooding is directly related to the dramatic shift of the Dominican population from rural to urban areas over the past half century and the subsequent increase in population living in hazardous locations.

2.8 Conclusion

This chapter has explored approaches to objective and subjective adaptation and adaptive capacity in order to locate the research project in the wider theoretical and policy debates.
Climate change adaptation has emerged as an important and necessary response to climate change. Despite early approaches being planned and technological in nature, gradually the value of community-based adaptation, which seeks to understand the climate change realities and support the existing coping mechanisms of those already experiencing and responding to climate impacts, has steadily gained importance. Adaptation, it was shown, can take place at a number of scales and in a number of ways though its successes are dependent upon the adaptive capacity of the system to actually carry them out.

Measuring adaptive capacity is complicated by its latent nature and because there is no universal agreement as to what its determinants are. That said, there is a tendency in policy and academic discourses to emphasise the objective factors such as financial, technical, institutional and political constraints. The assumption is that capacities to respond to weather impacts will be greater with increased access to these determinants. The value of this approach lies with its ability to uncover what people are potentially able to do given access to such assets but it is unable to expand on motives for adaptation, that is to say, why people decide to take actions, or not and where they prioritise certain actions in relation to others. The chapter suggested that focusing on the subjective dimensions of adaptive capacities in general but with a focus on the sense of place in particular has the potential to fill in these gaps.

A focus on the sense of place as a determinant of adaptive capacity is rooted in environmental psychology discipline. Environmental psychology seeks to not only explore and characterise person-place relationships in general, but understand the specific behavioural implications that arise from them. For this reason it is a particularly attractive lens through which to explore climate change adaptation and adaptive capacity. Three main concepts were discussed as being central to the sense of place. Place attachment, which emphasises the emotional and affective bonds that people develop with places. Place dependence which highlights the functional value of places in
relation to others. Finally place identity which suggests that places form a part of each individual's self-identity. It was argued that a consideration of all three factors allows for a comprehensive understanding of the ways in which people relate to place.

In many ways, using the sense of place as a means of critically examining adaptive capacities has the potential to be able to draw together, incorporate and even interrogate aspects of the other, existing subjective approaches to adaptive capacity discussed in this chapter. In terms of the risk perception approach, placing people’s relationship to place at the centre of the analysis necessarily requires an understanding of individual and group risk perceptions as they relate to the places in which they live and interact with on a daily basis if household responses are to be understood within their local context. Furthermore, it has the potential to enrich this with a subjective understanding of how these perceptions are interpreted and how they impact on people on a more personal level. Focusing on place meaning also has the potential to highlight people’s place related values thereby enriching the values based approach to adaptation. It has the potential to highlight what they consider to be worth protecting, or not, whilst also exploring where they value investing in adaptation actions in relation to other valued investments that they could make. With self-efficacy representing a key dimension of a person’s place identity (Twigger-Ross and Uzzell 1996) a place-based approach uncovers the ways in which people feel they are able to respond to those place specific risks and what the factors shaping that belief system may be. In other words, it necessarily incorporates a consideration of people’s adaptation self-efficacy.

Culture, as was shown by Adger et al. (2013) is in many ways tied place. Identities, traditions and values are rooted in the locations in which they have developed overtime. A place-based analysis emphasises these and explores not only the impacts to them but also how these can potentially limit or support adaptation.

The chapter showed that, owing to the infancy of the sense of place-based perspective several gaps in the knowledge base exist. The argument for using the sense of place as a means of understanding adaptation is lacking in a real
life focus. While some of the assumptions made about human behaviour may have been based on empirical research in other contexts, this is either rarely carried out within the context of disasters and severe weather associated with climate change or does not do so within the context of urban centres in the global South. Instead this research has favoured unique or rural, vulnerable locations with extremely high vulnerability to climate change.

The notion of marginalised urban settings as meaningful locations, comparable to those unique areas (such as small island atoll nations and arctic regions), is one that could perhaps be easily overlooked in an analysis of the intangible impacts of climate change on valuable locations. This is owing to the often very real environmental and human insecurities which tend to exist in such places which mean that at first glance they may not support the development of the types of meanings typically associated with unique places. Yet there is no reason to suggest that the people living in these locations do not still assign a range of meanings to them. Furthermore the chapter argued that urban settings in the South are equally at the forefront of the climate change debate. These settings concentrate a large and increasing quantity of the global population living with the greatest exposure to climate change impacts. This, a result of the high rates of poverty and population concentration, poor infrastructure and limited access to services as well as limited capacities within local governments to confront climate impacts that frequently exist in such places.

Additionally it was argued that even unique locations such as SIDS differ in terms of their characteristics that affect their vulnerability to climate change and in terms of the possible response options open to them. That said, there is still little research even across similar contexts which is felt to be necessary to interrogate the existing assumptions in a ways that reflect the complexity of the climate change phenomenon and its context specific characteristics.

This chapter has proposed that the Dominican Republic offers fertile ground to explore the sense of place and urban poor adaptive capacities. The country’s increased vulnerability to disasters and severe weather associated with climate change make it a relevant case study option in which to explore
climate change adaptation. Additionally, the country’s highly urbanised population concentrating a large percentage of the population at risk of disaster and climate change offer the necessary conditions to explore urban poor adaptation and the opportunity to contribute to the emerging focus on adaptation in cities of the South, yet extend these debates with a focus on subjective sense of place determinants which is yet to have been carried out. As a small island developing state yet one that is characteristically very different to atoll nations it has the potential to complement the existing literature on small islands, climate change and the importance of considering the sense of place.

Now that this chapter has identified the debates and gaps in the knowledge base to which the research will contribute, the following chapter will explain the research approach and methods developed to allow for an exploration of the role of the sense of place in urban poor adaptive capacities in the Dominican Republic.
Chapter Three: Research Approach and Methods.

Introduction.

The literature review presented in Chapter Two revealed several gaps in the knowledge base relating to climate change adaptation and the sense of place. Discourses of climate change adaptation have been dominated by objective measurements of people’s capacities to take action to protect themselves and their assets from severe and extreme weather. These understandings are based on the presumption that the possession, or absence, of certain assets will dictate whether or not people take actions to adapt to climate change. These, objective approaches have not paid sufficient attention to motives to adapt, or not, and the subjective determinants which may determine the types of strategies they choose (although see Grothmann and Patt 2005, Fresque-Baxter Armitage 2012), particularly in urban centres of the South. Given that climate change will be experienced most profoundly in places (Burton et al. 2006) which often have some level of meaning attached to them by the people associated with them (Adger et al. 2011), Chapter Two suggested that understanding this meaning may provide important insights into some of the subjective drivers of adaptation (see also Fresque-Baxter Armitage 2012). It proposed the use of the ‘sense of place’ as it is understood in the discipline of environmental psychology, as an analytical lens to explore place meaning and the impact it has on adaptive capacity.

This chapter presents the methodology and methods which have been used to explore the role of the sense of place in urban poor adaptation. It is divided into eight sections. Section one presents the research aims and questions. Section two discusses the research methodology, that is to say, the epistemological and ontological positions underpinning the research. The justification for the use of a case study framework is presented in section three and this is followed by a discussion of the scale at which the sense of place has been explored in section four. Section five briefly explains how the sense of place was operationalised in the research and summarises the key
issues under investigation. Section six describes the research process and the particular methods used in each community are discussed in Section seven along with an explanation of the way in which the data resulting from their use was analysed. Finally section eight presents a reflection on completing intercultural research, particularly in relation to translation, representation and positionality.

3.1 Research aims and questions
Considering the gaps in the knowledge base, the aim of the research is to understand the sense of place of urban poor individuals and households and how it shapes their adaptive capacities and strategies to confront disasters and severe weather associated with climate change. Informed by concepts from within the environmental psychology literature, such dynamics will be explored through a contextual case study in three low-income, urban communities in the Dominican Republic. The Dominican Republic was selected because of its highly urbanised population, SIDS status and high exposure and vulnerability to climatic hazards and weather extremes. In order to achieve this research aim, the following research questions were developed:

1. How are national and local policies framing the sense of place, disaster risk management and climate change adaptation debate in the Dominican Republic?

2. What constitutes a sense of place for individuals, households and communities living in informal urban settlements in the Dominican Republic?

3. Is there a link between the sense of place and the adaptive capacities of the urban poor to face the impacts of disasters and severe weather associated with climate change?

The following section discusses the underlying research approach in which the research aim and questions are grounded.
3.2 Methodology: epistemology and ontology

Most sense of place theory and research tends to be situated within either the positivist or constructivist research paradigms. Positivists adopt a realist ontology (relating to the nature of reality) and objectivist epistemology (relating to the nature of knowledge). These approaches are based on the assumption that reality is objective and exists outside of the person observing it (Perlesz and Lindsay 2003: 28). Through scientific enquiry, researchers can attempt to capture this reality and in this way come to know the world as it really is (Della Portia and Keating 2008: 23).

This perspective would suggest that the sense of place is an external, pre-existing construct. Researchers can attempt to measure it through the use of methods designed to be as value free as possible, even if researcher bias means that this is never fully achievable (see Guba and Lincoln 1994: 110). A positivist approach to the sense of place therefore tends to be experimental. It is characterized by hypothesis testing through the use of quantitative methods (Stedman 2002: 562, see also Shamai 1991, Hidalgo and Hernández 2001, Jorgensen & Stedman 2001, Mishra et al. 2010). This perspective is open to criticism because the methods typically adopted, such as questionnaires and survey instruments, often with fixed questions and pre-determined responses, risk neglecting:

‘…important theoretical tenets, including the relationships between symbolic meanings and evaluations, the importance of landscape characteristics as natural capital out of which the sense of place may be created, and the effect of sense of place variables on subsequent behaviour.’ (Steadman 2002: 562)

As this research will show, these methods also risk over-simplifying the complex ways in which people interpret their surroundings as well as they ways that they construct and act upon the meanings they derive from them. This is particularly important in a study which seeks to understand how these meanings interact with responses to climate impacts. Further, the somewhat rigid format of survey instruments does not allow the researcher to probe the participant’s responses for detail and meaning. This prevents researchers
from obtaining and then following up on any unanticipated outcomes that may prove to be important.

This study is theoretically grounded within the constructivist research paradigm. It rejects the realist ontology which posits that there is one independent static reality and instead adopts a relative ontology which states that there can be multiple realities, which are socially constructed (Guba and Lincoln 1994: 110, Perlesz and Lindsay 2003: 28). These realities are not fixed but are instead variable across space and time. The relative ontology is reflected in the research’s approach to the sense of place as a subjectively experienced phenomenon shaped in time by the wider social, economic, political and cultural contexts in which the individuals and groups are located.

The constructivist approach adopted within this research also assumes a subjectivist epistemology which holds that knowledge is created by the researcher and participants, not discovered (Denzin and Lincoln 2011). Furlong and Marsh (2010: 199) state that it is not possible to understand social phenomena independently of our interpretation of them. Rather it is the very interpretations that directly affect research outcomes. Because it is the interpretations of social phenomena that are crucial and these can only be understood within discourses, contexts and traditions, researchers should focus on identifying these discourse, contexts and traditions and the meanings they attach to social phenomena (Furlong and Marsh 2010: 199).

It is from this epistemological position that the research explored the varying interpretations, understandings and meanings of place among different urban communities as well as how disasters and severe weather affect people’s everyday lives, social worlds and realities as they relate to ‘place’. The research methods employed in this research were informed by the constructivist stance underpinning the project which is concerned with participants’ perspectives of their own worlds and the meanings that they assign to phenomena and events. As a result research from this perspective tends to adopt particular methods which provide a means of capturing people’s voices these will be discussed later in the chapter.
3.3 Case study framework

Within this constructivist methodology the research made use of a case study framework. As demonstrated in Chapter Two, the little existing research that explicitly suggests that the sense of place may impact upon adaptive capacities has not adopted a case study approach. Instead such research has focused on forming a ‘working typology’ of interconnected perspectives that can highlight the ways in which place identity may impact with climate change adaptation (Fresque Baxter and Armitage 2012: 251). This research is based on theoretical assumptions related to human behaviour borrowed from the sense of place literature and applied to a hypothetical climate change context. As such, their framework lacks empirical application to validate or invalidate some of the assumptions that have been made.

A case study approach offers the only means of addressing this issue and is particularly important given the location specific nature of climate change impacts. Case studies facilitate an understanding of ‘complex social phenomena’, allowing the researcher to focus on a particular case and ‘retain a holistic and real-world perspective’ (Yin 2008: 4). As such, the approach was particularly attractive for this investigation which sought to produce in-depth information based on several months in the field in order to further understandings of urban poor relationships to place as well as the consequences these may have for urban poor adaptation and adaptive capacities.

In total three case study communities which will be described in greater detail in Chapter Five, were selected. This selection process was based on common criteria that had been identified prior to commencing fieldwork activities and which provide useful proxy indicators of urban poverty levels (see Moser and Stein 2011). These were; exposure to environmental risks, low quality and high density housing, deficiencies in service provision and tenure status. The selection was also based on practical considerations relating to access to community residents discussed in greater detail below. A comparative case study approach was envisaged as inevitable given the diversity present both
within and between communities combined with the varied and subjective nature of the phenomena under examination, particularly where notions of identity are concerned. A comparative approach provides scope to explore and expose common and distinct patterns that emerge from varied situations and contexts. Patterns that emerge are particularly interesting because they may indicate ‘core and central impacts of wider relevance’ exactly because they occur across diverse groups and diverse settings (Roche 1999: 153).

3.4 Sense of place scale of analysis
Research on the sense of place suggests that human – spatial bonds can form at multiple scales ranging from objects within the home to the regional, national or even global levels (e.g. Cuba and Hummon 1993, Altman and Low, 1992). Lewicka (2010) points out that the majority of sense of place research focuses on the neighbourhood level with fewer studies dealing simultaneously with more than one place scale.

In this research the decision was made to focus on the sense of place in relation to the house and the community but with a methodology that was sufficiently flexible as to allow residents to discuss other places that were significant to them. The decision was made to focus on these two units of analysis because despite being a global issue, the impacts of climate change will be felt most profoundly and also responded to in local places. Housing and the community are two of the most reduced units of analysis at which climate impacts will be experienced by urban poor residents and therefore provide a means of emphasising the localised nature of climate change impacts.

3.5 Operationalising the sense of place in adaptive capacity.

Despite the increased focus on adaptive capacity discussed in Chapter Two, there is less by way of empirical grounding as to how it may be measured. Yohe and Tol (2002: 28) point out that ‘[t]he determinants of adaptive capacity can also only be measured by proxy, particularly notions such as social and human capital.’ In this research, to explore the sense of place as a potential
determinant of or limitation to adaptive capacity, a similar approach was adopted. I developed various proxies for measuring the sense of place (see Table 2) which in itself is used as a proxy for understanding adaptive capacity. Guidance for the development of proxy indicators for dimensions of the sense of place was obtained via an extensive review of existing environmental psychology literature.

Table 2: Summary of key issues and indicators used in the research.

<table>
<thead>
<tr>
<th>Research Questions</th>
<th>Key Issues Studied</th>
<th>Key Questions</th>
<th>Indicators</th>
<th>Methods used</th>
</tr>
</thead>
<tbody>
<tr>
<td>How are national and local policies framing the sense of place, disaster risk management and climate change adaptation debate?</td>
<td>Legal Institutional Programmatic</td>
<td>To what extent do recent and current climate risk management projects incorporate consideration of the sense of place?</td>
<td>Unit of analysis for projects. Type of climate event considered. Consideration of non-tangible impacts. Framing of potential impacts to health and culture.</td>
<td>Secondary research Semi-structured interviews.</td>
</tr>
<tr>
<td>What constitutes a sense of place for individuals, households and communities living in informal urban settlements?</td>
<td>Attachment Dependence Identity</td>
<td>Attitudes towards: community, other residents, other communities housing</td>
<td>Positive/negative aspects Distinctiveness/difference Physical and social changes Individual, household and community achievements Impact of association with the community Family and friend links Future plans and hopes</td>
<td>Interviews Participant Observation Auto-photography</td>
</tr>
<tr>
<td>Is there a link between the sense of place and the adaptive capacities of the urban poor to face the impacts of disasters associated with climate change?</td>
<td>Attachment Dependence and Identity Type of weather events to impact. Adaptation strategies Impacts to sense of place.</td>
<td>Place making behaviours linked to attachment, identity and dependence Perceptions of, attitudes towards and responses to weather impacts.</td>
<td>Perceptions of most problematic weather events and local environmental risks. Physical and emotional impact of problematic weather on residents, housing and community. Responses to physical and emotional impact of problematic weather on residents, housing and community. Opinions on support offered and/or necessary to support effective responses to weather impacts.</td>
<td>Interviews Auto-photography Participant observation.</td>
</tr>
</tbody>
</table>

Source: Author’s own elaboration.
The following section will discuss the research process, that is to say the way in which the research in the case study communities came to be realised.

3.6 Research process

Most of the primary research was undertaken during three visits to the Dominican Republic between April and December 2014 although some follow-up visits to the communities took place in November and December of 2015. The first visit which took place from April to July was spent mostly in Santo Domingo (see Figure 5) carrying out interviews with employees of humanitarian agencies and national and international Non-Governmental Organisations, shadowing national and local NGOs as they carried out research in low income urban communities and making regular visits to other cities with the intention of locating possible research sites.

The planned case study site had originally been the secondary city of San Pedro de Macorís located on the south coast, around 70 kilometres to the east of the capital, Santo Domingo (see Figure 5).

*Figure 5: Map of Dominican Republic showing Santo Domingo and Pedro de Macorís (red).*

Source: Google Maps.
The city had been provisionally selected because the rapid expansion it has undergone has meant that the city has developed in a chaotic and disorderly fashion; particularly in hazard prone areas alongside the river and coastline (see Mendelson Forman and White 2011, ONE 2011: 67). It is a coastal city situated within the country’s high risk hurricane belt and therefore exposed to the more high profile hurricane and tropical storm events. Such a location was considered to be necessary to examine the interaction of urban poor sense of place and disaster events associated with climate change which was the initial focus of the research but which was later amended to fit with the local context as will be discussed in greater detail later in this chapter.

As such, initial research activities were focused around identifying potential communities within San Pedro de Macorís which were suitable case study locations according to the previously identified criteria discussed earlier. After carrying out an interview with a member of the Chilean non-profit organisation Un Techo para mi País2 (A Roof For My Country, TECHO hereafter), I was invited to participate in a two day scoping exercise to San Pedro de Macorís. Their aim was to visit previously identified impoverished communities across the province (also called San Pedro de Macorís) to identify potential areas in which they could implement future programmes. The idea was that I could also use the opportunity as a means of discussing my research with communities and potentially identifying suitable locations in which to carry it out.

San Pedro de Macorís.

Visits to San Pedro de Macorís took place in May 2014. I accompanied a member of TECHO to three of San Pedro’s poorest urban communities over two days. Upon arrival we identified the president of the Junta de Vecinos (community organisation) and introduced ourselves and TECHO. We carried out a transect walk with him in which the poorest parts of the community and people in the lowest quality of housing could be identified (see Photos 1 and 2). We then carried out a survey for TECHO with the president to obtain a

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2 TECHO is a not for profit organisation that mobilises young volunteers to fight extreme poverty in various countries throughout the Latin American and Caribbean region by constructing transitional housing and implementing social inclusion programs.
more detailed picture of the community in terms of its history and development, dynamics and level of service provision. Upon completion of the survey and to triangulate the data given, a further two surveys were carried out with a community leader and one household in extreme poverty. However in reality our presence in the communities attracted lot of attention and we inevitably ended up having informal conversations with a number of individuals and groups.

**Photo 1: Street prone to flooding in Las Colinas II, San Pedro de Macoris.**

![Image of a street prone to flooding in Las Colinas II, San Pedro de Macoris.](image)

Source: Holly Schofield.

**Photo 2: Example of low quality housing in Las Colinas II, San Pedro de Macoris**

![Image of low quality housing in Las Colinas II, San Pedro de Macoris.](image)

Source: Holly Schofield.
A number of issues arose out of these community visits. First of all a picture began to emerge which reaffirmed what two leading humanitarian specialists had explained to me in the two days prior to completing the visits (Interview Del Rio 08.05.2014, Interview Rennola 09.05.2014). This was that disasters were not necessarily the most pressing weather events for residents despite typically being considered the greatest threat to the country (see Medeiros et al. 2011: 77). Rather, in the communities in San Pedro de Macorís, issues with severe, rather than extreme weather were considered to be more problematic, particularly the impacts of heavy rain and heat.

Despite two of the three communities being potentially suitable case study sites according to my previously identified criteria, ultimately I chose not to carry out the research there. Despite introducing myself as a student, I felt as though my perceived association with TECHO would complicate the research process and impact the information provided to me by residents, whether or not TECHO ultimately selected the communities as beneficiaries of their housing programmes. For example, as mentioned, one of the scales of analysis for this research was the house. A large proportion of the research involved exploring if and how weather events impacted on the house, what the emotional impacts of that were and if and how this shaped potential responses to such events. Given that TECHO are known for providing new housing for residents in need, participants may have had little incentive but to offer exaggerated accounts in the hope that this may result in some type of material gain. On this basis I did not select these communities but instead continued to visit other potential sites in the country as and when the opportunities to visit them arose.

Santo Domingo

In April I was invited by the Instituto Dominicano de Desarrollo Integral (Dominican Institute for Integral Development, IDDI hereafter) to participate in some disaster risk management (DRM) focus groups that they were running in a number of the city’s marginalised communities. Originally these

3 IDDI is a well-established non-governmental development organisation. A key element of the work they do focuses on capacity building in Santo Domingo’s marginalised neighbourhoods (see Pelling 2011).
were scheduled to take place throughout April and May. Ultimately, due to various complications (staff sickness, break downs in security) it was only possible to attend one community visit with IDDI. However, even on that visit the scheduled focus group activities were unable to take place due to miscommunication between IDDI and community members themselves. During the visit, interactions with community members were minimal (other than with the IDDI employees and volunteers, some of whom were also residents) because we were driven to the location in the community where the activities were to take place in an official vehicle where the driver waited outside for us; once the meeting had finished we were then driven back out of the community.

Some of the more valuable discussions and community visits in Santo Domingo were those which originally occurred through local contacts made via chance meetings with residents of the city’s marginalised communities. Upon my arrival in the Dominican Republic, I was staying in a hotel in the city’s old town whilst building contacts and carrying out some preliminary informative interviews with workers from local and national agencies. During this time I came to know two of the hotel’s female cleaning staff well, both of whom were residents of La Ciénaga, a low income urban community in the capital and who regularly invited me to their houses to spend time with their families and friends. I conducted an in depth interview with one of these participants early in the research process as a means of learning more about the community.

Owing to the greater focus on such areas in existing climate change and vulnerability research in comparison to smaller, secondary cities (Moser et al. 2010), the capital city was not originally a first choice of potential research location. However the richness of the access I was afforded to the community and to people living with the greatest levels of environmental risk in the entire country made the incorporation of these voices into the overall research project particularly attractive.

Further to this, in May I attended a two day conference and series of workshops at the Autonomous University of Santo Domingo (UASD). The aim
of the event, which was organised by local NGO Ciudad Alternativa (Alternative City), was to open an inclusive dialogue including a range of city stakeholders on the sustainable development of Santo Domingo’s floodplains. A central element of the conference was the inclusion of the perspectives and opinions of residents living in the city’s riverside communities in the debate. As such I was able to use the event as a means of discussing my research with the residents and other stakeholders in attendance. In discussions with people at the conference and those in La Ciénaga, it was frequently expressed that while disaster events are certainly feared, they again were not the most problematic weather event that residents needed to respond to with the most frequency. Residents rarely distinguished between disaster events when the effects on them were indirect (such as when a hurricane did not make landfall), even though in these cases the impacts were still severe, and usually could not name a hurricane to have impacted since George in 1998. In all communities, residents expressed that what would more typically be considered as severe, rather than extreme weather was more problematic on a day to day basis. Here, severe weather refers to those weather events such as heat, heavy rainfall and localised flooding, which because of the level of exposure of the affected groups, are often intensified significantly and can often overwhelm the coping capacities even when not nationally or internationally recognised as a disaster (see also Moser et al. 2010).

Given such findings, it was clear at this point that the direction of the research needed to be amended slightly from the intended focus on one specific disaster event to include a more generalised analysis of the interaction of the sense of place within the context of a changing climate to both disasters, where residents felt as though it was relevant, but also to severe weather events that residents themselves prioritised as problematic. Less constrained by the need to focus on a case study city in the high risk disaster zone, I was able to consider realising the research in cities in other parts of the country. The city of Santa Barbara de Samaná (commonly referred to as Samaná) was
recommended to me as a potential site by IDDI and Prosoli⁴, given their existing close links with communities there.

Samaná

Visits to Samaná, (marked on Figure 6) took place during May and June. This smaller, secondary city but provincial capital had been recommended to me as a more manageable research site for a single researcher yet one which had been identified as being particularly vulnerable to climate change impacts by Climacción, a United States Agency for International Development (USAID) funded organisation which seeks to raise awareness about climate issues in the Dominican Republic.

Figure 6: Map of Dominican Republic showing location of Samaná

The city is located on the North-eastern peninsula (see Figure 6) and sits in the medium risk zone for tropical storms and hurricanes (See Figure 4). The peninsula as a whole, and the city, is particularly prone to flooding (Caffrey et al. 2013) the aftermath of which in Samaná can be seen in Photos 3 and 4.

⁴ Prosoli is governmental program which aims to reduce poverty in the Dominican Republic through targeted conditional cash transfers and human capital development in health and education.
According to the 2010 census completed by the National Office of Statistics (ONE 2010a) Samaná has a population of 33,196 inhabitants.

Photo 3: Samaná following heavy rain.

Photo 4: Esplanade, Samaná following heavy rain.

Source: Holly Schofield.

After visiting the city and entering a handful of communities, I also approached the governmental organisation Prosoli to gain support in visiting
and identifying case study communities in the city. Once I had given employees my previously identified criteria for selection I was taken to visit seven of the cities communities and after discussions with staff, meetings with the Junta de Vecinos of the two most appropriate communities were set up. The case study communities selected in Samaná were Panchito and Wilmore (shown in Photos 5 and 6).

**Photo 5: One entrance to Panchito.**

![One entrance to Panchito.](source: Holly Schofield)

**Photo 6: One entrance to Wilmore.**

![One entrance to Wilmore.](source: Holly Schofield)
The following section will present the research methods used in each of the case study communities.

3.7 Research methods

Not all methods were employed uniformly in all of the communities (see Table 3). Ethical considerations relating to resident perceptions of threats to their security in Wilmore meant I did not carry out auto-photography there. Also the distance (180km) between the Samaná, where I lived, and Santo Domingo, where La Ciénaga is located, meant that it was not possible to carry out some of the more labour intensive participatory methods there, which require sustained contact over weeks at a time to organise and carry out. Table 3 shows which methods were employed in each of the case study communities. This is followed by a discussion of the tools used and how and where the data resulting from them has been made use of in the research.

Table 3: Methods employed in each case study community.

<table>
<thead>
<tr>
<th>Case Study</th>
<th>Semi-structured Interviews</th>
<th>Participant Observation</th>
<th>Focus Groups</th>
<th>Auto-photography</th>
</tr>
</thead>
<tbody>
<tr>
<td>Panchito</td>
<td>19 participants (17 interviews 2 interviews with two people)</td>
<td>Approx. 51 days.</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Wilmore</td>
<td>18 Participants 17 interviews</td>
<td>Approx. 39 days.</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>La Ciénaga</td>
<td>5 participants 15 days</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>42 participants 39 interviews</td>
<td>Approx. 105 days</td>
<td>3</td>
<td>6</td>
</tr>
</tbody>
</table>

Source: Author’s own elaboration.

5 Although not used as official case study sites, two days of participant observation which included informal conversations with residents was undertaken in Las Colinas I and II and Villa Progresso in San Pedro de Macoris. Some photos that were taken have been used in the thesis as visual accompaniment to the text where relevant.
Semi-structured interviews.

Semi-structured interviews do not necessarily follow a strict, pre-established list of questions but instead follow an interview schedule which outlines issues to be discussed during the course of the interview (Willis 2006: 144). They allow researchers to explore issues with informants in a flexible manner, and to make use of supplementary questions to help clarify complex responses (Woodhouse 1998: 133) as well as to probe for more in depth, detailed or supplementary information based on the responses of the research participant.

These interviews were envisaged as providing the greatest means of exploring issues surrounding the sense of place within the context of climate change and disasters (see Appendix Six for a sample of the types of questions asked during interviews). Although some sense of place studies have relied more on the use of positivist methods, such as survey instruments, for data collection (Kaltenborne 1998, Mishra et al. 2010), these methods are open to criticism because they offer respondents a finite list of responses which have been prepared by the researchers and run the risk of privileging the researchers’ understanding of possible responses over the accounts of the respondents in a context in which the possible range of responses is not understood (Chamlee-Wright and Storr 2009: 620). The use of semi-structured interviews provides the participants with an opportunity to play a more active role in framing and filling in the details of their narrative. This subsequently allows the researcher a better opportunity to make sense of the beliefs and attitudes that are guiding the respondents’ actions (Denzau and North 1994 in Chamlee-Wright and Storr 2009: 620).

I carried out all research activities in Spanish without the help of an interpreter based on my existing proficiency in the language\(^6\). This had both benefits and challenges. Conducting research in a second language inevitably contributed to my position as an outsider, which was reinforced by some differences

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\(^6\) I hold an undergraduate degree in Spanish and have spent several summers living and working in Spain. Whilst completing my degree I spent one year studying in a university in Madrid. Prior to undertaking the degree I also spent one year in South America and the Caribbean which afforded me a certain degree of prior knowledge relating to aspects of the regional social and cultural context prior to commencing fieldwork.
between the Castilian Spanish spoken by myself and the Dominican form spoken by the participants. Indeed, there were times that I felt that I missed some subtleties in the language however I found that the outsider status assigned to me because of differences in language was less influential than that which was assigned to me because of other fixed aspects of my identity such as my gender and ethnicity as will be discussed in greater detail in section eight of this chapter.

It was also important that interviews were carried out at residents’ houses (or that I was able to visit them there at some point in the handful of cases where interviews were carried out at a place of work). This was not only because the house was one of the units of analysis, but also so that it was possible for me to view the type and quality of housing, local risks, what types of weather event residents may be impacted by and the extent this may occur. This was particularly important in terms of framing the analysis of each interview. Observing and interviewing residents in their homes allowed for me to better understand how their responses were shaped by their individual, local context.

I found it beneficial to start some preliminary analysis of my recorded material, whilst still gathering data but also to continually listen to them whilst still in the Dominican Republic. This allowed me the added benefit of constantly refining the interview process as I could reflect on patterns of how the questions were interpreted by the participants and which ones provided more or less rich responses and amend them appropriately. This strategy also helped me to achieve a greater level of familiarity with language nuances as I was able to identify common and different ways of expressing certain phenomena. Because I would still continue to spend time with participants after the interview had taken place, I could double check meanings or ask any additional follow-up questions that I had after reflecting on the original interview.

Initially I translated my interview data from Spanish to English, however once back in England and when attempting to analyse it I felt as though some of
the richness of the interview had been lost in the process and it felt very far removed from the social and cultural settings in which they had taken place. To overcome this, Smith (2003) suggests analysing interviews in the source language and only translating excerpts. Although this allowed me to retain the richness that I felt had been lost in translation, it still requires that a degree of translation continue to take place. The issue of translation in research will be discussed in greater detail in the final section of this chapter.

In total forty interviews were carried out with residents from within the three main communities with an additional three interviews with residents of Haitian decent from neighbouring communities in Samaná. The total number of residents interviewed was forty six due to three interviews being with two people at the same time. Residents made up the largest interview group given that the focus was on the relationship between urban poor sense of place and their capacity to adapt to climate change. The data gathered from the interviews has been used to inform the empirical Chapters Six and Seven which together characterise the sense of place for individuals, households and communities living in informal urban settlements and explore how this sense of place shapes the adaptive strategies and capacities of these groups.

Additionally eight interviews were carried out with other stakeholders in climate change adaptation and disaster risk management in the Dominican Republic (e.g. civil defence, municipal representatives) plus four specialist interviews at the beginning of the fieldwork with the hope of better understanding how the issues of climate change, adaptation and disasters were framed at the national and municipal levels. Given the comparatively later incorporation of La Ciénaga into the research process and its use as a means of providing a comparative voice from the residents themselves to the research process, interviews were only carried out with residents and not with local municipal leaders as was the case in Samaná. As such, Chapter Four which discusses how national and local policies frame the sense of place, disaster risk management and climate change adaptation debates, relies on interviews provided by municipal leaders and stake holders only in Samaná. This however is not envisaged as entirely problematic. The secondary data
relating to national disaster risk reduction and climate change adaptation used to inform the chapter has often been completed incorporating information from Santo Domingo and the perspectives from specialist development workers were mostly based on Santo Domingo. The experiences of these specialists is particularly valid given that development agencies play close attention to the disaster risk management and climate change adaptation activities of the state to know how best to target their own interventions. In addition to this, municipal workers in Samaná suggested that local policy in relation to climate change remains shaped by, and often reflective of, policies and approaches from the capital from where they take lead. This being the case, while the official voices of individual members of the appropriate ministries in Santo Domingo may not be present, the range of other information does support the formation of the wider picture about what is occurring in the capital in relation to climate change (see Appendix One for a table of all semi-structured interview participants).

Participant observation
As suggested earlier, throughout the fieldwork period the research relied on the ethnographic method of participant observation, a method whereby the researcher aims to obtain information and achieve close familiarity with a group of people, their customs and their practices, through involvement with such people within their own cultural setting. In theory, participant observation, seemed to fit particularly well with goals of place-based research and consequently with the conceptual framework guiding this particular study because it:

‘… enables a researcher to explore the complex connections that social groups establish with one another and the places they inhabit, cultivate, promote, defend, dominate and love.’ (Herbert 2000: 564)

This was particularly attractive for the research which seeks to understand these connections but then also what the implications of the connections are for adaptation and adaptive capacity.
In practice, the exact activities included within the method are relatively vague and can involve a great variety of strategies locatable within a continuum of researcher participation (see Spradley 1980 in DeWalt and DeWalt 2011: 22-25). At one end of the continuum is non-participation, whereby the researcher obtains cultural knowledge by observing the phenomena from outside of the particular research setting. At the opposing end is complete participation, where the researcher becomes a member of the particular group that they are studying. Between these two extremes lie; passive participation, where the researcher is present but only observes the research setting, moderate participation, where the researcher occasionally interacts with the research participants and active participation where the researcher engages is the majority of activities being undertaken by the research participants. The extent to which the researcher can ever fully integrate into the research setting and become a complete member is questionable, particularly in a cross-cultural and urban poor research context. That said, I found that being fluent in Spanish somewhat facilitated my integration into the research communities and allowed me to cultivate a greater level of rapport which lead to me being able to undertake greater levels of participation than would otherwise have been possible had I needed to work with interpreters.

In my own experience, opportunities for participant observation were facilitated greatly by Dominican hospitality. Often they arose out of invitations to return to eat at the homes of the first participants that I interviewed as well as by attending weekly community meetings. Following on from this, wherever possible I engaged in active participation. This involved spending a day (or sometimes several) with families and participating in household activities such as washing clothes, preparing lunch and eating with the family or just generally sitting around and talking. Engaging in everyday activities with families in this way helped to build trust with them, their neighbours, friends and family members who would inevitably call around at some point during the day. This in turn often then paved the way for me to conduct more in-depth interviews with the participants at a later date, and facilitated the process of snowball sampling, a process whereby one contact suggests other possible interviewees, who in turn suggest others (Willis 2006: 148). Spending
time with residents meant that they were more comfortable when it came to introducing me to other community members. These, in turn, were often more receptive having seen me engaging in everyday activities within the community.

Participant observation undoubtedly served as a useful tool for understanding the ways that people in the communities related to place, however, it also served to be particularly useful for triangulating the information that participants gave to me during semi-structured interviews and focus groups about how the weather impacts them. Indeed in interacting with the residents, and participating in the everyday activities of the community, ethnographic research methods, such as participant observation, allow for an examination of ‘what people do as well as what they say’ and therefore enables ‘an insightful examination of any discrepancies between thoughts and deeds…providing insights unallowable by any other methodology, even open-ended interviews’ (Herbert 2000: 552, original emphasis).

For example, in the communities in Samaná at times during interviews when it came to discussions of how the weather impacted upon residents there was often a tendency for the impacts of the more every day events (such as heavy rains and storms as opposed to hurricanes) to be normalised, go unnoticed or sometimes perhaps even be deliberately downplayed by the participant in situations where they were embarrassed that the low quality of their housing meant that the rain in fact soaked the inside of the house and their possessions during a downpour. As a consequence they could not always identify all of the strategies they adopted to face such events. However, often in these cases participant observation which inevitably meant I would be present in family homes during heavy downpours for example, revealed such coping measures as placing buckets on the floor under holes in the roof, tying plastic sheeting to the walls under the roof to catch water that drips through, moving or standing up mattresses and covering beds and certain assets with plastic sheeting, despite saying that the weather did not impact them or the home environment.
Participant observation as a method, whilst flexible, is unstructured in comparison to other research methods. This has a number of implications for data collection. For example, it is difficult, when undertaking the method to know exactly what information to record, how to record it and also when to stop. Following guidance from DeWalt and DeWalt (2011), events, overheard conversations and informal interviews, which often turned out to be just, if not at times more revealing than the relatively more formal semi structured interview tool, were immediately, or as soon after the event as possible, recorded as field notes in a fieldwork journal which I frequently revisited. This then allowed me to identify and explore patterns of behaviours and common attitudes that arose throughout the fieldwork process. The observations have been used as a means of informing the empirical Chapters Six and Seven. In addition to semi-structured interviewing and participant observation, the research also made use of participatory methods for data collection. The participatory methods used were focus groups and auto-photography. Each will be discussed.

Focus groups
I had originally planned to carry out participatory focus groups in all communities. The methodology for the planned focus groups was based on urban participatory climate change appraisals carried out in Nicaragua and Kenya which provided a means of quantifying the asset vulnerability of urban poor individuals, households and small businesses to extreme weather associated with climate change as well as the strategies that the groups adopt to address such vulnerability (see Moser and Stein, 2011).

Ultimately one focus group using these specific methods took place in Panchito. Six long term residents from within the community were selected (differing in age and gender) following a meeting with the Junta de Vecinos to identify potential participants. Whilst the group generated some valuable information it also served to highlight the complexities and challenges in carrying out such sessions in urban poor contexts. For example, the group was scheduled to take place at the site in the community used by the Junta de
Vecinos for their meetings. The building however is an open space with a concrete roof to protect from the sun but with no walls. It is also situated at the main entrance to the community from the city centre, meaning there was a relatively constant stream of people passing by. Whilst I had tried to limit the group to a maximum of six people, the activities ignited interest in passers-by, many of whom stopped to at least to contribute thoughts and ideas, and at most to immerse themselves fully in the tasks, sometimes taking control by recording the answers of other group members when the aim of this style of focus group was supposed to be on the equal participation of each attendee.

Photo 7: Junta de Vecinos community centre, Panchito.

Source: Holly Schofield

The focus group in Panchito made use of several participatory tools developed by Moser and Stein (2011) in their asset vulnerability and adaption methodological framework. The first activity completed with the group was a transect walk. The walk lasted three hours and proved to be incredibly useful as a means of introducing myself and briefly outlining the research to the community members (thereby dispelling or minimising suspicion) as well as gathering contact details of prospective interview and or focus group participants. It also served to show me the parts of the community which were
the most vulnerable to climate impacts. It also highlighted some issues relating to my positionality which will be discussed later in the chapter.

Photo 8: Area prone to flooding, Panchito.

Source: Holly Schofield

Photo 9: Area prone to flooding, Wilmore.

Source: Holly Schofield

Following the transect walk, once back at the Junta de Vecinos centre the group was asked to draw a map of the community. Residents found this task particularly difficult on the basis that there is only one tarmac road that runs
through the community. Other than that, routes through the community connecting those living in the higher and lower parts have been largely cut or walked through the vegetation by residents themselves over the years and they found it difficult to translate this onto paper. Their inability to actually complete the map other than marking the presence of the main road was equally as telling as a completed map would have been, because it caused residents to reflect on the differences in terms of access afforded those living next to the road side and those living further away from it as well as the problems that this caused them during and after heavy rains. These issues will be discussed in greater detail in Chapter Seven.

Following the mapping exercise, participants were then asked to draw a timeline of the history and development of the community which also served to highlight when extreme events had impacted them. The third tool to be utilised was a listing and ranking of the type of weather that impact the area. In the fourth exercise participants were asked to identify and rank their most important assets before in the final exercise being asked to identify how they cope with or adapt to extreme weather events. While, these tasks allowed for an understanding of how the participants were impacted by and responded to climatic events, a further two exercises had been planned to elicit more explicit sense of placed based information. However, in reality, the schedule proved to be overambitious and due to the intense heat and lack of time it was not possible to complete the sense of place based tasks.

Further scheduled focus groups in the community were repeatedly cancelled and rescheduled, especially during the summer months when the chikungunya virus was particularly prevalent in the community and meant people were often ill or caring for ill family members for weeks at a time. Under these circumstances, I decided that the subsequent focus groups should be more spontaneous and informal in nature and identified as and when the situations presented themselves whilst spending time in the communities. Informal focus groups have the advantage of possessing greater flexibility and for potentially increasing representation given their ability to encourage participation from residents that are unlikely to attend
more formal events. Yet their informal nature means that people are more likely to enter and leave throughout and are less likely to commit the same quantity of time as those attending a formal event (Moser et al. 2010). Nonetheless, two further focus groups were carried out in this way, one mixed group in terms of age and gender in Wilmore and one, all female group in Panchito.

Rather than focusing on the participatory methods described earlier, the subsequent two groups focused more on generating data through group discussion and communication. In a development context, focus group discussions have been noted for their ability to provide data on the meanings that lie behind group assessments and perceptions and on group processes that underlie particular behaviours or viewpoints (Lloyd-Evans 2006: 154). To elicit information which would allow for a better understanding of the sense of place during these focus groups participants were asked to describe the community, how it has changed over the years and what they see as being the positive and negative aspects of living there. This was followed by a discussion on the types of weather that they experience in the area and how it impacts upon them. Once they had identified the types of weather they were asked how they typically respond to them. The data from the focus groups was used to inform Chapters Six and Seven.

Auto-photography

An additional participatory method introduced later in the research process was auto-photography, also known as solicited or elicited photography. The research method consists of providing a number of selected participants with cameras and encouraging them to take pictures of their environments, in this case, under certain subject areas. The photos, which then form a basis for discussion with the participants, are used as a visual means of collecting verbal information.

The use of auto-photography was loosely based around that used by Lombard (2013) when investigating place-making in low-income and
marginalised settings in Mexico. A total of five participants took part in the study in Panchito although in one case two of the members were from the same household but had both demonstrated an interest in taking part. Participants were selected based on where they lived in the community (i.e. relatively spread out across the community) whilst trying to include a representative mix of participants in terms of age and gender. They were each given a disposable camera (except for the household with two family members taking part who shared a camera between the pair) and asked to take photos under various topics that would elicit information relating to the sense of place and also to their own perceived vulnerabilities to extreme weather associated with climate change. Participants were asked to take at least four photos under the following headings:

- positive and negative aspects about living in the community
- important areas in the community
- aspects that are different about living in the community
- ways in which the weather impacts you/ the community

Once participants in Panchito had been identified and the potential ethical considerations discussed, a lesson in using the camera was carried out. Participants were given two weeks to take the photos during which regular contact was made with them to check that the project was going well and that the cameras were working properly. Once the participants had taken all of the photos I took the cameras to get them developed. Once received, an interview was arranged with the participants to discuss the photos that they had taken.

A benefit of making use of auto-photography in this research was that it exposed other aspects of the participant’s sense of place in a way that had not emerged from the other research methods. Indeed, initially the main reason that the method was implemented was because many of the same ideas and responses were coming out of the semi-structured interviews carried out in the community. For example, whilst in almost every single interview participant expressed that a positive feature about living in the community was that it was ‘tranquilo’ (used to mean quiet, safe and calm), in
comparison to other areas of the city, photography participants focused on other interesting positive aspects relating to community aesthetics and the ways in which they felt as though this was reflected in the identity of its residents. This will be discussed in greater detail in Chapter Seven.

The method also proved to be successful in encouraging participants to reveal the variety of ways that they are impacted by the weather. For example, during interviews, because participants knew that I was interested in discussing weather impacts a number of people had a tendency to immediately want to focus on large scale disaster events despite also explaining to me that these events do not happen with frequency. At times residents would recount dramatic stories about hurricane events, and it would be for me to attempt to establish if they themselves had been present or if these were stories that they had heard elsewhere. Additionally it was often found that slow incremental impacts of weather often go unnoticed or are normalised as part and parcel of living in a tropical country. Giving people a camera and two weeks to document weather impacts gave them more time to capture the range of incremental or everyday impacts in the community rather than just the large scale events, particularly as it was unlikely that a hurricane would impact in the two weeks in which they had the camera. In these cases participants focused on smaller scale impacts such as how the rain can flood pathways leading to difficult and decreased mobility and on what methods they adopted as a household to counter the negative impacts of weather events. By enlisting participants from different areas of the community, solicited photography provided an innovative opportunity for participants to capture their own perceptions of their vulnerability and exposure to climate change impacts, a method which despite there long being a focus on the importance of participatory methods for identifying vulnerability and solutions to it (Huq and Reid 2007, Ayers and Forsyth 2009, Moser and Stein 2011) to date does not tend to feature as a method used in this type of research. While the method undoubtedly proved useful in capturing these aspects, having a photograph of weather impacts also proved useful as a visual stimulus and platform for further discussion about how the weather and the sense of place interact and what their feelings on that were.
Options for the analysis of the data from auto-photography vary. Some studies have relied on content analysis whereby the items captured in the photos are coded and analysed quantitatively by noting the frequencies of what features in the photographs and by whom (Johnsen et al. 2008, see also Collier and Collier 1986, Ziller and Camancho 1989). Such approaches have been criticised for failing to consider the full range of meanings that the photos and the items captured within them may encapsulate for the participant (Johnsen et al. 2008, Cook and Crang 1995). Furthermore such an approach, when used alone, omits the participant from the process of analysis, almost contradicting the participatory nature of the exercise that I was hoping to achieve.

Lombard (2013: 28) notes that one option is to look at all of the photos as creating an overall sense of place but raises the concern that the approach ‘risks being limited to illustration’. Indeed this does not allow the researcher to see the potentially different weighting that participants assign to the images. It also risks framing the set of photos as representative of the entirety of a person’s experience in place or as representative of how they always feel about it (Dodman 2003). This is particularly important here when considering the focus on examining how certain weather phenomena change or at least interact with place meanings at different times.

Emphasising the accompanying narratives to the photos achieved via a follow-up interview carried out here and in other qualitative studies (Collier & Collier, 1986, Lombard 2013), also known as photo-elicitation (Harper 1986), is an important way of challenging these issues. In allowing the participants and researcher discuss the images the participant has the opportunity to discuss why they chose to capture certain images over others. The data from these interviews has informed Chapters Six and Seven. A number of the photographs have also been used in those chapters as a means of providing visual accompaniment to the text and illustrating residents’ perceptions of their communities and the way that weather impacts them.
Data Analysis
The data generated from the range of interview activities (including semi-structured interviews, auto-photography interviews and recorded focus group conversations) was analysed in a number of stages.

It commenced with the listening to, refining and transcribing of interview data whilst still in the field. The three dimensions of the sense of place which had been identified through an extensive literature review prior to commencing fieldwork (attachment, dependence and identity) were immediately placed in a type of constant comparison table alongside the name and details of research participants (such as age, gender, housing quality, obvious weather exposure etc.). Perceptions of problematic weather also formed another category. This helped, not only to visualise the frequency with certain topics and themes emerged throughout the process but also to understand people’s responses in line with their local context and the types of groups expressing them (i.e. men/women, homeowners/renters, or those living with very high or low levels of exposure to environmental risk).

I then repeatedly listened to interview data and read transcriptions in light of these broad headings that had been generated. I picked out descriptive terms and associated concepts which were used by the respondents themselves, again in Spanish. This process was facilitated somewhat by the fact that a number of questions used in the interview process had been pre-designed as a means of loosely eliciting information relating to peoples sense of attachment, dependence and identity as such a number (although certainly not all) of the responses to questions aimed at characterising people’s sense of place at this point fit into these pre-established categorisations.

These descriptive terms were grouped into topics of interest and recorded under the previously identified broader headings. Such topics of interest included appreciation for the natural/built environment, social relationships, perceptions of others, perceptions of security and insecurity, plans, hopes and aspirations, religion, health, security of tenure, emotional impact of and responses to weather events and damage. Once these, were recorded under the broad topics of interest, trends were identified based on the concurrence
of descriptive terms, concepts and topics thereby helping the building up of the themes. The most frequently recurring themes were identified and used to form the subjects of discussion in the empirical Chapters Six and Seven.

As mentioned, the data from participant observation was recorded in a fieldwork journal which I revisited constantly throughout the analysis and write-up period. In this way it was used as a means of triangulating the themes and assumptions that resulted from the analysis of the semi-structured interviews, focus groups and photo elicitation interviews. The following section will provide some brief reflections on carrying out intercultural research.

3.8. Reflections on doing intercultural research.

This section reflects on the research process in the Dominican Republic particularly in relation to representation and translation in foreign language research and also in relation to positionality.

Representation and translation.

The issue of translation and the comparative voice of the researcher and researched in qualitative research is complex. The dominant model of research translation has tended to frame the researcher as ‘objective instruments of research’ (Temple and Young 2004: 163) with translated texts being treated as fait accompli and characterised by assumed neutrality (Muller 2007: 207). In reality translation often suffers issues relating to the competency of the researcher in the source language (Muller 2007). Muller (2007) suggests looking beyond semantics, which can often mean that some things are lost in translation (Smith 1996) and instead focus on the transference of meaning from a source into a target language. Operationally this technique, which I later adopted and which is known as ‘Holus-Bolus’ (Muller 2007) means not ‘translating the untranslatable’ (Hassink 2007: 1286), instead leaving in terms that are particular to the research context as ‘markers of difference’ (Muller: 2007: 210) and which help retain the elements of
richness that I felt had been lost when I had translated the interviews into English in their entirety.

Even once these considerations have been implemented however, translation still suffers the same issues of representation present in all qualitative research. The researcher remains tasked with the responsibility of choosing how to represent their participants and this is the case regardless of whether or not the research is carried out in a different culture and language. Suggesting that, as Lombard (2009: 174) states:

‘…different readings of the information gathered may coexist alongside the critical ontological stance that there are many truths and realities, [which] means the most the researcher can offer is an interpretation of an interpretation, complicated further by her own subjectivity and positionality’.

In this sense representation remains a personal and political process which requires the researcher to be self-reflexive and transparent in the research process (England 1994).

Positionality

As with representation, the issue of positionality, referring to the researchers place in the research setting based on how aspects of their identity stand in relation to the research community and participants (Lunn 2014: 274), lies at the centre of qualitative research. ‘[Positionality] frames ‘social and professional relationships in the field, [setting] the tone of the research, affecting its course and its outcomes’ (Chacko: 2004: 52) with the specifics of the researcher and participants’ identity being strongly implicated in the research outcomes (Robinson: 1994). As mentioned earlier, differences in language contributed to my outsider status in the communities although this alone perhaps had less of an impact than did other aspects of my identity.

My gender often afforded me an instant closeness with female participants, particularly with older female residents, many of whom had a tendency to want to be protective and play a more mothering role. However it made
access to male residents less easy. This was due to concerns relating to my safety and because local cultural norms in which it may not be safe for a lone female to enter the home of a male participant without other people being present especially since female attention towards males can be easily misinterpreted as romantic interest.

In the Dominican Republic (as in much of the Latin American and Caribbean region), gender norms and relations are shaped by a culture of ‘machismo’. Machismo is characterised by an implied male domination of men over women, vehement sense of masculinity and masculine pride and, at times, exaggerated demonstrations of masculine qualities (Baud 1997). This can often manifest in bold, flirtatious and sometimes from an ‘outsider’ perspective, quite vulgar behaviours directed towards women which support the assertion of masculine sexuality. Leering, vulgar gestures, bold comments and hissing at women were behaviours that I saw and was subjected to not only in the communities but throughout the Dominican Republic whenever unaccompanied by a male. Within the communities (and in wider Dominican society) this is usually accepted or at least tolerated by Dominican women. I saw a variety of ways in which Dominican women would respond to exaggerated displays of male interest. This varied from the return of crude comments, to laughing and at times even returning flirtatious behaviours by more confident women, to ignoring it altogether among others. Particularly confident Dominican women often encouraged me to respond to male taunts with the same level of boldness as directed at me which was something I was not necessarily comfortable doing. On the other hand anything less can sometimes be interpreted as interest among those which are particularly persistent.

There were times that I felt as though I was not taken seriously by male participants, other times I had to terminate interviews early because the flirtatious behaviour made me question my personal security or because it became even more inappropriate, tiresome and overpowering. Completing interviews with married men in the presence of their wives was one useful way to ensure access. Another was to request the support of older female
residents and ask that they introduce me to trusted local males or family members. Although I made use of all of these methods, the dynamic did affect the research process and is the reason for the greater female bias among interview participants.

An additional challenge relating to my positionality, particularly at the start of the data collection phase related to my economic status and one as a white foreigner. Although throughout the research process I generally found that residents shared a mutual curiosity about me and my life, at least initially, residents, particularly in Panchito, frequently equated my being white and foreign to me being a representative of an international donor agency. Although not only restricted to the Dominican Republic, the high number of national governmental and non-governmental as well as international donor led projects to have taken place in the country has contributed to the widely held perception in the communities that research activities and interventions of all varieties come with (or may ultimately have the potential to provide) tangible benefits to them (Apentiik and Parpart 2006). A major consequence of this is that it means participants may be inclined to provide exaggerated responses to any questions asked with the hope of attracting some form of aid (Apentiik and Parpart 2006).

I found that residents' initial expectations of what I was able to produce was shaped by my gatekeepers and subsequently to external support. In Samaná, my access to communities was greatly facilitated by the governmental organization Prosoli who have a strong presence in all of the city's communities. Once I had selected the case study communities based on the criteria as set out earlier they organised a meeting between the local community organisation leaders and I. First I was introduced to the leader of Panchito's community group who also worked as a security guard at the Prosoli head office in Samaná. We organised that I could return the coming Sunday to attend the weekly community meeting and meet some more of the community members.
Upon commencement of the meeting the president rapidly handed over the floor to me and I discussed with the residents who I was and what I was hoping to do whilst in the community. I used the opportunity to organise a transect walk for a couple of days later. When I returned to the community, I was met by quite a large group of residents who took me on a tour. Although I had asked to see the entire community it became apparent that residents only wanted to show me the parts of the community inhabited by those who were in the most need, and coincidentally where each of their houses were. Residents kept encouraging me to take photos of the houses in the worst state and as I approached one, relatively consolidated house, a member of the group urged me to go a different way stating ‘alli no hay necesidad’ (‘there, there is no need’) referring to the household’s presumed higher economic status. I explained to the group that I would like to see all of the community, and not only the poorest households but they seemed confused as to why I would be interested in talking to wealthier residents.

In another situation, whilst talking to one resident I overheard the president of the community group telling another household that I was representative of the United Nations from Miami. Whether he had said this because he believed it to be true, or as a means of perhaps boosting his own standing while promoting the success of the community group for having attracted foreign assistance was unclear to me. However I felt the need at this point to clarify again with the group who I was and what I was doing and that I was not linked to any organisations that may provide assistance. Nonetheless, despite this, I was later taken to a church that had been built by residents from materials that they had salvaged from around the community. It was in a run down state and one of them asked again, if there would not even be money for the church. After leaving the community that day I felt disheartened that despite repeated attempts at clarifying my intentions, the residents did not seem to want to hear that I was not from any type of donor agency, and unable to provide them with assistance. I also felt uncomfortable continuing with research activities with the group given the misconceptions as to why I was carrying out research activities in the first place.
I returned to the Prosoli offices to request assistance from the director in clarifying to the president of the community group that I was not attached either to Prosoli or to an international organisation which she did immediately. I also found that time spent in the community was the best way to dispel the myths that residents held about me and what I was there to do, allowing residents the time to get to know me better and ask questions based on their own curiosity rather than other people’s assumptions of why I might be there.

I approached the second community in Samaná once I had already commenced research activities in Panchito and felt as though I could split my time well between them without breaking links and momentum in terms of building trust that I had gained up until that point. Although Prosoli again organised my introduction with the president of the community association this took place in a less formal manner. I carried out the transect walk only with him rather than with a whole group of residents. I met the majority of the other community leaders on an individual level through the president and so when I started to attend meetings many people mostly knew who I was already. I feel as though this approach helped remove some (although perhaps not all) of the expectations that community members had but then again with time spent in the community I felt confident that I was able to dispel myths about my presence.

Finally in La Ciénaga, a community which had been subject to far more interventions than either Panchito and Wilmore, where I entered as a (albeit white, foreign) friend of a resident (Sofia), I felt again as though residents expectations of me were lower than they had been in Panchito and in Wilmore. Sofia was able to organise my preliminary interviews with people that she knew already from the church and reinforce the notion that I did not belong to any type of external agency. After conducting interviews we usually spent the rest of the afternoon in the vicinity and sat with residents, almost always in groups, which usually expanded over the course of the afternoon talking or being shown around their houses. That being said, my positionality as a white female, and Sofia’s positionality as a single, female, resident meant that she was only comfortable organising interviews with other female
residents. Although we had informal conversations with men, all formal interviews were conducted with women, in part because of our positionality but also because the high levels of insecurity in La Ciénaga meant that Sofia felt more comfortable if I was leaving the community around or before 17:00, when many male residents had still not arrived home from work but giving me enough time to both leave the community and arrive home during daylight hours.

3.9 Conclusion.

This chapter has discussed the methodological approach adopted in the research. The approach was based on the theoretical considerations established in Chapter Two in which it was suggested that, to date, approaches to climate change adaptation in cities of the global South have neglected to consider the role of subjective factors, when it comes to understanding adaptive capacities and strategies to confront disasters and severe weather associated with climate change. Given that climate change will impact in ‘places’ which are often known to hold subjective meaning for people associated with them, it was suggested that an exploration of people’s ‘sense of place’ may provide one means of exploring the subjective dimensions of adaptation and adaptive capacities.

On this basis a research aim was developed which was to explore the sense of place of urban poor individuals and households and how it shapes their adaptive capacities and strategies to confront disasters and severe weather associated with climate change. A subjectivist epistemology and relativist ontology underpin this research aim which allow for an exploration of subjective place related experiences and participants’ perspectives of their own worlds and the meanings that they assign to phenomena and events. The methods adopted by the research, semi-structured interviews, participant observation, focus groups and auto-photography were chosen to allow for a more in depth exploration of such factors while a case study framework was employed to do so in a real life context. The data collected from these methods in the communities was used to inform the empirical Chapters Six
and Seven, which focus on characterising the sense of place and the ways in which this shapes adaptive capacities and strategies to confront climate events. The data collected from interviews with non-community based participants such as municipal officials, has been used to inform the following chapter which explores institutional and policy approaches to the sense of place and adaptation in the Dominican Republic to see the extent to which subjective drivers feature implicitly or explicitly in national and local climate change policy.
Chapter Four: Institutional, donor and municipal approaches to Disaster Risk Management and Climate Change Adaptation.

Introduction

Chapter Two demonstrated the increasing global emphasis on adaptation as a necessary response to climate change. This, it was shown, has resulted in increased attention being placed on understanding the capacities of systems to enable adaptation to take place. To date, the determinants of adaptive capacity have largely been understood to be financial, technical, institutional and political assets and constraints. That said, the chapter showed there to be incipient but increasing acknowledgement in academic and policy literature on climate change, that subjective factors, including people’s relationships with, and within spatial locations may also play a role in adaptive capacities and shape the way that impacts are felt.

This chapter will explore the extent to which this apparent recognition can be said to have been adopted in national and local policies for Climate Risk Management specifically in the Dominican Republic. Climate Risk Management is approached from two separate perspectives in the Dominican Republic; Disaster Risk Management (DRM) and Climate Change Adaptation (CCA). Typically the foremost climate risks faced by the country have been associated with extreme weather events such as hurricanes and tropical storms, next to which incremental changes have been viewed as being of ‘lesser importance’ (Medeiros et al. 2011: 77). Unsurprisingly therefore, DRM has received greater attention from governmental and non-governmental organizations than CCA which, whilst it is gaining importance, is still seen as a relatively new and less understood area.

This chapter is guided by the research question; how does national and local policy frame the sense of place and adaptation debates? It will examine and compare current approaches to DRM and CCA nationally in the Dominican Republic and also locally, in relation to the three case study communities that
were introduced in the previous chapter but will be expanded upon in the one that follows. The aim is to understand to what extent current institutional and policy mechanisms in these fields explicitly or implicitly include a consideration of the role that subjective factors, play in shaping urban poor adaptive capacities to climate change. It will also identify, where appropriate, barriers to incorporating a greater emphasis on urban sense of place factors in current and future adaptation initiatives.

The chapter draws on a range of published materials as well as the data collected from research activities that took place in the Dominican Republic. This includes meetings, conversations and interviews with humanitarian and development specialists from international and local organisations. In addition, it uses data collected from municipal officials, civil servants, specialists and members of the civil defence and fire department.

The chapter has five sections. Section one examines and compares legislation, institutions and programs for DRM in the Dominican Republic. It examines the extent to which considerations of the sense of place are accounted for in existing national level DRM policy. Section two turns the focus to legislation, institutions and programs for CCA in the Dominican Republic, again, examining the extent to which considerations of the sense of place are accounted for in existing national level CCA policy. When examining considerations of the sense of place in DRM and CCA policy, where possible, particular attention is paid to the fields of health and culture. This is because, as demonstrated in Chapter Two, the debate in the academic and policy literature to date, has started to emerge from within these two fields.

Section three explores recent donor and development agency approaches to DRM and CCA programming in the country. It examines and compares DRM and CCA initiatives and the approaches that they have taken so as to be able to consider whether they implicitly or explicitly consider sense of place factors. Section four reduces the focus of the analysis to the level of the case study communities; Panchito and Wilmore in Samaná and La Ciénaga in

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7 It is important to note that although there are a number of seismic risk reduction initiatives taking place in the Dominican Republic, the exploration of DRR initiatives here has been restricted to those which are climate related and therefore relevant to this particular research.
Santo Domingo. It explores and analyses the municipal and donor approaches to DRM and CCA in the case study urban areas. Section five draws together and discusses the main findings of the analysis as well as their implications for supporting a consideration of the relationship between the sense of place and urban poor residents’ capacities to respond to climate change.

4.1 National Disaster Risk Management policy

As stated, this section explores existing DRM policy in the Dominican Republic to determine to what extent it explicitly or implicitly makes considerations for risk management and adaptation in urban poor settings and to what extent they consider the interaction of climate events and non-tangible, subjective emotions such as the sense of place.

Much of the national level DRM activity in the Dominican Republic has focused on the development of legislation. This has been driven, in part, by International conventions, agreements and movements in Disaster Risk Reduction (DRR) including The Hyogo Framework for Action (HFA), International Decade for Disaster Risk Reduction and the UN International Strategy for Disaster Risk (UNISDR). However, much of this activity also came as a response to the effects of a range of disaster events in recent years such as hurricanes David and Frederick (1979), Georges (1998), Jeanne (2004), Noel and Olga (2007). These hurricanes have provided evidence of the country’s exposure and vulnerability to severe weather events and encouraged the adoption of laws and development of institutions to guide DRM activities (IFRC 2012, UNDP 2013).

For the most part DRM is governed by the DRM Act (Law No. 147-02). The Act which was promulgated in 2002 predates the HFA and followed Hurricane George. It built upon and modified pre-existing institutional structures that had been established over the previous four decades as a consequence of various largescale extreme weather events that had impacted the country (IFRC 2012).
The DRM Act provides the country with an overarching legal and institutional framework to guide DRM policies and programmes. One of its central tenets had been the development of the country’s National System for Disaster Prevention, Mitigation and Response (SNPMRD) (Congreso Nacional 2002). The SNPRMD draws together the norms, guidelines, activities, resources, programmes and actors that work together to fulfil the disaster risk objectives set by the DRM Act. It seeks to direct and integrate the various actors working within the field of DRM at the national, regional and municipal levels. The SNPRMD covers actions to be carried out by public and private entities, community organizations and NGOs, the media and donors at every stage of the disaster management cycle (Congreso Nacional 2002, UNDP 2013, IFRC 2012).

The DRM Act itself does not necessarily directly legislate for DRM in low income urban settings however together with a range of associated laws it does have the potential to indirectly facilitate it. For example, it calls for the decentralization of prevention, mitigation and response actions to the local level which provides greater opportunities for municipalities to identify and act upon local issues. It also calls for the close coordination between sectoral secretaries of state and territorial actors as well as the strengthening of procedures to encourage citizen participation in prevention, mitigation and response activities meaning again that local realities can potentially inform DRM strategies (Congreso Nacional 2002). A separate law, the National District and Municipalities Act (Law No. 176-07) provides for the decentralization of some DRR responsibilities to sub-national and municipal levels particularly ones related to environmental management, development and land use planning. Another separate law (Law No. 166-03) makes provision for a fixed ten percent of total government income to be transferred to municipalities for elements of DRR as well as for the provision of basic services. A further law, (No. 170-07) creates the System for Participatory Municipal Budgets and provides for citizen participation in the content, implementation and evaluation of municipal budgets as well as in the financing of social and economic community works (see IFRC 2012).
Overall responsibility for implementing the DRM activities and leading the SNPMRD lies with the National Council for Disaster Prevention, Mitigation and Response (CNPMR). The CNPMR meets at least twice a year, is headed by the President of the Dominican Republic and composed of a range of representatives from ministries and departments including secretaries of state and heads and representatives of civil society. Responsibility for coordination among the differing institutions on a technical basis lies with the National Emergency Commission (CNE). The CNE, which is coordinated and chaired by the executive director of the Civil Defence, plans, coordinates and manages all stages of disaster response and recovery. This also includes financial aspects such as contributions and international aid from donors during disasters which it manages in coordination with the Ministry for Foreign Affairs (Herrera Moreno and Orrego Ocampo 2011). The operational wing of the CNE is the Emergency Operations Centre (COE) which coordinates response and preparedness from the declaration of an alert through to the possible or eventual response. In addition to these, other important bodies include the National Technical Committee (CNT) which advises the National Council for Disaster Prevention, Mitigation and Response. The National Technical Committee has responsibility for updating the National Risk Management and National Emergency Plans as well as the coordination of DRR activities, establishing networks at the regional, provincial, municipal and local levels as well as capacity development (Herrera Moreno and Orrego Ocampo 2011).

The DRM Act defines several programmatic policy instruments for managing disaster risk which include; The National Disaster Risk Management Plan, The National Emergency Plan as well as the National Fund for Disaster Prevention, Mitigation and Response and the yet to be developed National System for Integrated Information (Congreso Nacional 2002, see also IFRC 2012). The National Disaster Risk Management Plan (CNE 2011), and The National Emergency Plan (ODC, Ingeniar, La Red and ICF 2001) lack any in-depth recognition of the need for DRR in urban environments, limiting their considerations to the occasional acceptance of the increased vulnerability of low income groups living in environmentally exposed locations (e.g. ODC,
Ingeniar, La Red and ICF 2001: 34). However, the National Disaster Risk Management Plan (CNE 2011) does make a number of references to DRR in relation to human settlements and infrastructure which are closely related thematic areas. Vulnerabilities in such areas tend to be seen as a function of infrastructure and planning and the policy response seems to be based on the opinion that they are most suitably addressed through engineering and technological solutions (e.g. CNE 2011: 31).

Disaster Risk Management policy: considerations of a sense of place?

Considerations of disasters and psychological factors that may relate to the sense of place do not feature in national DRM policies, programmatic or legal frameworks. National Natural Disaster Plans relating specifically to the health sector from the 1990’s called for the need to develop guides for the provision of mental and psychological support and detection services in emergency situations and displacement camps (Secretaría de Estado de Salud Pública y Asistencia Social (State Secretary for Public Health and Social Assistance) 1990). However, such ideas seem not to have been developed either in subsequent health and disaster policy documentation nor in national DRM policy and legal frameworks (Secretaría Ejecutiva del Consejo de Ministerios de Salud de Centroamérica y República Dominicana (Executive Secretary of the Council of Health Ministry for Central America and the Dominican Republic), 2012). In so far as current national plans such as the National DRM Plan (CNE 2011) and the National Emergency Plan (ODC, Ingeniar, La Red and ICF 2001), which are designed to draw all actors in disaster management together do consider health in relation to disaster events, this is framed in two key ways. Firstly there is a focus on the need for disease outbreak monitoring and control (CNE 2011: 30) and secondly, a focus on the importance of assessing the structural vulnerability of health care structures and their capacities to respond to potential disaster events (CNE 2011: 31). In this sense they reflect the perception of the comparative importance of physical over mental health issues and the bias towards the idea that engineering provides the most appropriate solution for risk reduction.
4.2 National climate change adaptation policy.

Unlike DRM the field of CCA lacks an overarching legal framework that directly governs adaptation activities and a principal institutional system within which actors involved in CCA can be grouped. Although DRM legislation has been shaped by the country’s experiences with repeated disaster events, the Dominican Republic seems to have taken its lead on climate change action from the international developments when it comes to the framing of the threat and the subsequent developments that have arisen from that, as initially discussed in Chapter Two. For example the chapter showed that prior to the start of the millennium, the international climate change debate was owned by scientists and framed largely as an object of scientific knowledge and environmental concern requiring scientific analysis (Cohen et al. 1998: 343, see also Huq et al. 2006: 6). Scientific responses to the threat throughout this period centred on how best to understand the phenomenon and also on how best to reduce the quantity of GHGs in the earth’s atmosphere, or in other words, the response was framed in terms of mitigation (Grothmann and Patt 2005).

Early Dominican climate change legislation implemented at the turn of the millennium reflects this international focus and understanding of the threat. Law 112-0 on hydrocarbons and Law 125-01 General Electricity Law (see Table 5) have a specific focus on the increased taxation of fossil fuel use to support the development of clean energy and programs to support energy efficiency (Nachmany et al. 2015). Such laws clearly reflecting this scientific focus with the desired outcome of supporting climate change mitigation. More recently, however, there has been a shift of the international framing of climate change from an object of solely scientific concern to one of concern for development specialists. That the country’s Development Strategy 2010 – 2030 (MEPyD 2010), which itself has become law (Law1-12) (see Nachmany et al. 2015), includes adequate adaptation to climate change as a central part of its development vision suggests that Dominican legislation is beginning to follow the international lead relating to the reframing of the climate change threat as a developmental rather than solely scientific issue. However, in
reality this change appears slow to take hold, and a focus on mitigation still characterises governmental institutional approaches to climate change (see Medeiros et al. 2011).

The field of CCA in the Dominican Republic seems to suffer from an overlap and lack of clear mandates of institutions involved in CCA activities. In 2008 National Decree (601-08) created the National Council for Climate Change and the Clean Development Mechanism (CNCCMDL) with the objective of ensuring that commitments made by the country before the United Nations Framework Convention on Climate Change (UNFCCC) are complied with (World Bank 2009). The National Council draws some similarities with its DRM counterpart, the CNPMR. Like the CNPMR, the council is the highest national form of authority in its field and possesses responsibility for developing policies to mitigate and prevent the country’s GHG emissions as well as developing strategies to undertake climate action. Both the CNPMR and the CNCCMDL are headed by the president of the Dominican Republic however they have no formalised connection that could facilitate information transfer on issues of mutual benefit (UNDP 2013). Further to this the CNCCMDL has no formal connection with associated bodies already working in the field of CCA. This includes The Ministry for Environment and Natural Resources who had previously been the main focal point for CCA activities prior to the Council’s establishment and who now are thought to have adopted a more technical role (Medeiros et al. 2011, UNDP 2013, Interview Ignacio 30.10.2014). This differs from the CNPMR which groups together the range of other institutions and technical actors engaged in DRM activities, which each retain their own mandates but are incorporated within and report to an overall national structure for risk management.

Key programmes for CCA in the Dominican Republic, include the country’s two National Communication Reports to the UNFCCC (State Secretariat for the Environment and Natural Resources (SEMARENA) and UNDP 2004, 2009), the National Adaptation Plan of Action (2008) and the Strategic Plan for Climate Change (PECC) 2011-2030 (CNCCMDL 2011) which present GHG inventories, vulnerability studies and plans to mitigate and adapt to
climate change. Additional programs for CCA include the aforementioned National Development Strategy 2010-2030 (MEPyD 2010) which recognises ‘adequate adaptation to climate change’ as being a central tenant of its development vision and linked to this document, The National Strategy to Strengthen Human Resources and Skills to Advance Green, Low Emissions and Climate Resilient Development (CNCCMDL 2012).

There is often the tendency, in such documentation, to frame the climate change phenomenon as one which will predominantly impact on rural, natural and environmental systems. For example common areas identified as being most vulnerable and in greatest need of adaptation are water resources, coastal zones, forestry, biodiversity agriculture and health (State Secretariat for Environment and Natural Resources (SEMARENA), 2004, 2008, 2009), fresh water and tourism, (SEMARENA 2008, 2009) food security, marine resources, infrastructure, human settlements and energy (SEMARENA 2008). However, as this research will show, people in urban areas are also experiencing significant impacts.

As was the case with approaches to DRM, some of this CCA documentation, such as the National Adaptation Plan of Action (NAPA) (SEMARENA 2008) and the PECC, (CNCCMDL 2011) does have a partial focus on human settlements and infrastructure, however again, the threat to these environments is framed in terms of the potential for large scale disasters. This lack of focus on the urban environment and what has been described as a rural bias in national adaptation policy such as NAPAs has also been noted in a range of other developing country contexts (see Satterthwaite et al. 2009a). In the NAPA vulnerabilities in urban areas are again framed as a function of adequate infrastructure and planning and most suitably addressed through engineering and technological solutions. A problem with this focus solely on disasters is that the range of other potential weather impacts that may impact upon the urban environment risk being overlooked (Moser et al. 2010). Although there is frequently a recognition of the need to incorporate ‘bottom up’ perspectives in adaptation documentation (SEMARENA 2008) the approaches to the adaptation of human settlements focus on top down,
structural measures such as; the inspection and improvement of infrastructure that is most vulnerable to flooding and landslides, the relocation of human settlements from vulnerable areas (see SEMARENA 2008: 69) as well as the need to revise existing legal and normative frameworks for construction, to reduce its vulnerability to climate change as well as planning for green infrastructure among other points (CNCCMDL 2011). In such an approach there is little scope for understanding the actual range of climate impacts as experienced by the urban residents themselves.

Such a framing of the debate and the lack of focus on the urban environment again reflects that which had, until recently dominated in the international policy arena. At the international level the need to understand urban vulnerability and adaptation in the urban environment is a relatively recent movement having only been incorporated as a central element of the IPCCs Fifth Assessment Report which was published towards the end of 2014 (IPCC 2014). Considering almost all of the Dominican Republic’s exiting national policy documentation on adaptation has been developed prior to the international recognition of the importance of considering urban centres it is perhaps unsurprising therefore that an explicit focus on the urban environment is missing from them.

Climate Change Adaptation policy: considerations of a sense of place?

As with DRM, a consideration of the sense of place is lacking from CCA programs. At the national level, neither of the National Communication Reports explicitly makes mention of culture or the sense of place in their assessments of climate risk or in their plans for adaptation (State Secretariat for the Environment and Natural Resources (SEMARENA) and UNDP 2004, 2009). The Country Development Strategy (MEPyD 2010) identifies culture as being important to its development vision but does not link this to its vision for adaptation. The NAPA (SEMARENA 2008) identifies cultural aspects as potential barriers or limitations to adaptation in its consideration of priority areas to target activities. The cultural examples provided include changes in customs, production methods and changes to lifestyles and eating habits.
However it assigns a low priority weighting to this (-5) in relation to other areas such as reducing poverty among vulnerable families (2.5) and strengthening economic activities (2.5) to provide two such examples (SEMARENA 2008: 39-40).

When it comes to climate change and health, as with the DRM documentation, there is the tendency to narrowly frame the likely impacts in terms of the potential for an increase in prevalence and distribution of infectious diseases and, to date, a consideration of other health impacts such as psychological, psychosocial or impacts to wellbeing are mostly absent. For example in the First National Communication Report (SEMARENA and UNDP 2004), there is an exclusive focus on the effects of climate variability on the incidences of malaria. In the Second National Communication Report (SEMARENA and UNDP 2009), the health impacts are extended to include a consideration of the effects of climate change on dengue and although the report accepts that extreme climatic events may impact on the prevalence of other infectious diseases these are not examined in depth, again the non-tangible health impacts are not considered. Both the NAPA (SEMARENA 2008) and the PECC (CNCCMDL 2011) frame the health implications of the changing climate in terms of the need to monitor and control disease transmission.

In light of the lack of focus on climate change in the urban environment as well as interactions between the sense of place and climate change the following section will explore non-governmental initiatives relating to DRM and CCA in the Dominican Republic to see if they explicitly or implicitly approach such issues.
Table 4: DRM and CCA policy analysis.

<table>
<thead>
<tr>
<th>Policy Domain</th>
<th>Disaster Risk Management</th>
<th>Climate Change Adaptation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Legal</strong></td>
<td>Disaster Risk Management Act (Law No. 147-02)</td>
<td>No core national legislation related to climate change adaptation.</td>
</tr>
<tr>
<td></td>
<td>Related Laws: The National District and Municipalities Act (Law No. 176-07)</td>
<td>Decree 601-08 created NCCCCDM</td>
</tr>
<tr>
<td></td>
<td>Law No. 166-03 -legislates for a fixed ten percent of total government income to be</td>
<td>National Development Strategy 2010-2030. Law 1-12</td>
</tr>
<tr>
<td></td>
<td>transferred to municipalities for DRR and basic service provision</td>
<td>Law 57-07 on Renewable Energy (supported by the 2008 Renewable Energy Regulation No. 202-</td>
</tr>
<tr>
<td></td>
<td>Law No. 170-07 - creates the System for Participatory Municipal Budgets and provides</td>
<td>08) (2007)</td>
</tr>
<tr>
<td></td>
<td>budgets as well as in the financing of social and economic community works.</td>
<td>Law 112-00: Law on hydrocarbons</td>
</tr>
<tr>
<td><strong>Institutional</strong>: Main public</td>
<td>National Council for Disaster Prevention, Mitigation and Response</td>
<td>National Council for Climate Change and the Clean Development Mechanism.</td>
</tr>
<tr>
<td>institutions and organizations</td>
<td>The National Emergency Commission</td>
<td>The Ministry for Environment and Natural Resources</td>
</tr>
<tr>
<td>involved in DRM and CCA at</td>
<td>Emergency Operations Centre</td>
<td></td>
</tr>
<tr>
<td>national and provincial levels</td>
<td>National Technical Committee</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Civil Defence</td>
<td></td>
</tr>
<tr>
<td></td>
<td>The Ministry of Economy, Planning and Development (MEPD)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>The Ministry for Environment and Natural Resources</td>
<td></td>
</tr>
<tr>
<td><strong>Programmatic</strong>: Programs for</td>
<td>National Disaster Risk Management Plan</td>
<td>National Communication Reports. UNFCCC</td>
</tr>
<tr>
<td></td>
<td>National System of Integrated Information</td>
<td>Strategic Plan for Climate Change 2011-2030</td>
</tr>
</tbody>
</table>
4.3 DRM and CCA initiatives in the Dominican Republic

Reflecting the importance of extreme events such as hurricanes and tropical storms in comparison to the slower more incremental changes (Medeiros et al. 2011), the Dominican Republic hosts a wealth of DRM initiatives. These plans are being implemented by a range of NGOs with the key actors including, Plan International, Oxfam Intermon and various branches of the Red Cross often in collaboration with other local actors including municipalities and local development agencies such as the Dominican Institute for Comprehensive Development (IDDI).

Key features of these projects, summarized in Appendix Five, is that they have largely been field level activities that have emphasised community participation and empowerment. This is displayed by the quantity of community based DRM projects that have been developed and implemented in various locations throughout the country. Community and institutional capacity development in relation to DRM is a key theme in most initiatives with community members being encouraged to identify the localised risks that they face, set their own goals and strategies for DRM and then participate in developing the necessary strategies to reduce exposures to disaster risk. In doing so they facilitate a greater emphasis and encourage a movement away from a strictly response orientated approach to a more proactive emphasis on the earlier stages of the DRM cycle, such as mitigation and preparation.

In the previous section it was shown that an explicit consideration of the urban environment and also the sense of place are often missing from national level
approaches to DRM and CCA. In so far as considerations of the urban environment are incorporated into policy, urban vulnerabilities tend to be understood as a consequence of urban infrastructure and planning and consequently most suitably addressed through engineering and technological methods.

This framing of the urban DRM debate in terms of the need for technological solutions has been blamed for the late engagement of development and humanitarian actors with the issue of urban disaster risk (see Pelling 2011c). Only in recent years have a handful of agencies working in both DRR, and CCA turned the focus to this setting in the Dominican Republic. In a recent policy recommendation and research document on ‘The State of the Climate Risk Situation and its Management in the Dominican Republic’, authors Herrera Moreno and Orrego Ocampo (2011) conclude that, accelerated levels of migration towards urban centres since the 1960’s and the subsequent increase of residents with low economic status being forced to reside in those parts of the city with greater environmental risk exposure, has meant that urban centres in the country now concentrate an important percentage of the population that are living with high levels of disaster risk. They call for the development of more climate risk management strategies which focus on the urban environment as well as on rural places and those which are of particular economic importance.

A handful of recent initiatives have begun to focus on the urban setting. Oxfam, for example, have played and continue to play a leading role in supporting community based DRM and building local governance for DRR in low-income urban settlements. To date however their focus has been almost exclusively on the capital city, Santo Domingo including La Ciénaga. Working closely with a locally based and well embedded Dominican NGO, the Dominican Institute for Comprehensive Development (IDDI) as their implementing partner, their programme focused on community awareness raising. This involved discussions with community members and social events as well as various participatory exercises such as risk mapping using local knowledge, hazard monitoring and early warning training. The project also saw local residents participate in carrying out physical mitigation projects.
before finally being handed ownership of the project (see Pelling 2010, 2011c).

Such programs do not directly or explicitly engage with the intangible impacts of disasters. Although not necessarily expressed by residents themselves, the programs possess the potential to have an impact on the sense of place of the urban poor because the activities involved can serve to enhance the sense of security that residents can gain from the local environment. These activities, in La Ciénaga included the placement of river-level markers in high risk flood zones along the river’s edge (which residents in La Ciénaga did describe as being useful in providing a visual confirmation should they need to evacuate), the construction and maintenance of evacuation routes and the increased awareness and understanding of actual risks that the program seeks to achieve (Pelling 2010, 2011c). Increasing the sense of manageability and security in the environment is thought and this research will show to be conducive to enhancing place attachments and identities (see Brown and Perkins 1992), even if, in this context, such enhancements may be small scale.

In addition to these physical aspects Oxfam’s initiatives have the potential to have positive social outputs which can contribute to an enhancement of the sense of community. For example the activities carried out were shown to have supported the formation of friendships between people with differing economic capacities living in the lower and higher risk areas of the same communities. Such friendships not only have the potential to increase wellbeing and quality of life but became useful in subsequent emergency situations when those living in high risk areas were able to find shelter in the houses of friends on higher land (see Pelling 2010: 43). Although factors such as in and out migration from the community are recognised as obstacles to the longevity of such outcomes, they show the potential that community based initiatives have for constructing positive social relationships and thereby offering residents another tool for coping with climate events even if these are not necessarily always permanent.
Whereas actors in DRM are realising community level initiatives in some urban areas and sometimes with an inadvertent focus on sense of place, these approaches are somewhat missing from recent donor approaches to CCA. The latest donor and development agency adaptation projects in the Dominican Republic, which have been summarised in Appendix Five, have most frequently focused on the sectors identified as priority areas of concern in national documentation such as the NAPA (SEMARENA 2008). These are freshwater resources, tourism, energy, forestry, coastal zone management. Of these sectors there is a particular focus on forestry and agriculture although capacity building to enable to government to facilitate CCA has also been prioritised and features in many of the initiatives being implemented (see also Medeiros et al. 2011).

To date the UNDP has been a key driver of adaptation activities in the Dominican Republic (see Appendix Five, Medeiros et al. 2011) either through its support in developing the National Communication Reports or in acting as a funding and implementing agency for a number of adaptation initiatives. Many CCA initiatives being implemented by the UNDP and others however focus mainly on measuring vulnerability in the key sectors and on presenting suggested lines of action for future adaptation initiatives. However the actual implementation of community level projects to act on these points which has been more a characteristic of the DRM approach, features less frequently in CCA policy and activities to date. Although there is often an appreciation of the importance of community capacity building, there are still comparatively few projects which directly engage with affected communities to understand and harness existing coping strategies as well as localised opportunities and barriers to community adaptation.

USAID is one organisation that is playing a key role in driving urban adaptation initiatives and uniquely, is incorporating a community based approach to the subject. USAID’s Country Development Cooperation Strategy 2014-2018 is largely framed in terms of the links between physical security and economic development but recognises the importance of increasing people’s resilience to climate change as fundamental in supporting that process. That said, the threat to urban centres posed by climate change is
described mostly in terms of large largescale disasters such as tropical storms and flooding and the appropriate response therefore in terms of DRR. Given this focus the opportunity for also considering the slower and more incremental impacts which were actually more problematic on a day to day basis are overlooked.

Given the lack of engagement with communities within recent CCA initiatives to date they have little scope for considering the issue of the sense of place and its interaction with climate events as well as with adaptive capacities. Recent assessments tend not to explicitly acknowledge the sense of place. Reflecting the narrow governmental framing of the health and climate change debate in terms of disease, only a few donor and development agencies who have carried out climate risk and vulnerability assessments have expanded the focus on health impacts of climate change to consider the less tangible mental health or psychological outcomes and these tend to be regional rather than national initiatives.

For example, in such documentation, there is at times an implicit focus on aspects of the sense of place even if it is not explicitly acknowledged. However where this occurs the issue tends to be framed in terms of disasters and/or displacement. For example, the Regional Risk Atlas (Simpson et al. 2012) acknowledged that weather can produce negative mental health outcomes where it causes displacement and/or loss of shelter which implies recognition of the sense of place and the centrality of the house to it. Additionally The Regional Strategy for Climate Change (Estrategia Regional de Cambio Climático) (Sistema de la Integración Centroamericana (SICA) and Comisión Centroamericana de Ambiente y Desarrollo (CCAD), 2010) recognises the need for further, in depth research in the region on the potential impact that climate change can have on health and apply the results. However, for this to have any meaningful effect in terms of the recognition of mental and psycho-social health issue, and therefore less tangible impacts, there needs to be a broadening of what is understood by health at the national, regional and local level from the narrow definition of health as the
absence of disease, to health as a ‘state of complete physical, mental and social well-being’ a per World Health Organisation guidelines.

That said, one measure in the health related objectives set out in the Regional Strategy for Climate Change does mention the importance of finding appropriate resources to implement the 2009-2018 Health Agenda for Central America and the Dominican Republic (SICA and CCAD 2010: 57). The Health Agenda for Central America and the Dominican Republic is the end result of a participatory research process led by the constituent countries’ health authorities who together formed a Sub-regional Technical Commission to draw up the Health Agenda and Plan of Action for Central America and the Dominican Republic (COTESAS 2009). The agenda is the result of extensive consultation with different sectors and organizations in the participating countries as well as the result of several international health meetings and agreements held in 2007. Technical and financial support to COTESAS throughout the development of the project was provided by The Pan-American Health Organization/World Health Organization (PAHO/WHO) and the Spanish Agency for International Development Cooperation (AECID). The agenda has ten strategic objectives of which one relates to climate change and is to: ‘reduce the vulnerability of the Subregion to natural disasters, anthropic emergencies, and the effects of climate change’ (COTESAS 2009: 12). Within this strategic objective there is an acknowledgement of the importance of including a ‘a mental health component in strategies for reducing vulnerability to natural and manmade disasters’ and to ‘guarantee health resources and services for potential disaster victims and survivors’. Although there is no explicit mention in this section of the sense of place, this widened focus provides some scope for its incorporation into health initiatives.

While the inclusion of the mental health impacts of disasters is certainly a welcome departure in CCA initiatives from the explicit focus on disease, framing the impacts to mental health, and to the sense of place only in the context of disasters and displacement again risks neglecting the ways in which smaller events and slower incremental changes which do not result in displacement impact on communities and households. Indeed, one humanitarian specialist for Oxfam in Santo Domingo explained that the sense
of place was not on the radar for the agency precisely because the type of disasters that tend to impact the country do not usually result in long term displacement (Interview Del Rio, 08.05.2014). Residents in the communities agree with the notion that on a day to day basis disasters themselves were actually not the most problematic event for them and that displacement caused by the weather was rare. However, this is not to say that their sense of place is not impacted upon by other omnipresent smaller scale impacts such as the threat of flooding during heavy rains, the erosion of their housing materials coupled with the general annual threat of disaster were their perceptions of their vulnerability to such events is high.

This section has explored programs relating to DRM and CCA being implemented in various locations throughout the Dominican Republic. The following section narrows the focus to the case study communities to explore and compare local climate risk management initiatives and considerations of the sense of place.

4.4 DRM, CCA and the sense of place in the case study communities?

In evaluations of DRM policy and legislation in the Dominican Republic Herrera Moreno and Orrego Ocampo (2011) as well as the IFRC (2012) highlighted a number of obstacles to effective disaster mitigation and preparation in the Dominican Republic. They stated that while Article 20 of the DRM Act makes provisions for a National Fund for Disaster Prevention, Mitigation and Response in order to capture and manage funds from national, international and private as well as public institutions in order to divert them into DRM activities, at the time of writing the fund had seen little activity and tended to be used more for emergency response rather than for activities geared towards mitigation and preparation. They also stated that that a lack of enforcement of Law No. 166-03 which legislates for a fixed ten percent of total government income to be transferred to municipalities for elements of Disaster Risk Reduction and basic service provision was a hindrance to effective DRM in the Dominican Republic.
Their sentiments were echoed in the interviews conducted in Santo Domingo with humanitarian specialists (Interview Del Rio 08.05.2014, Interview Rennola 09.05.2014) who explained that in their own experiences, disaster mitigation and preparation at the municipal level suffered greatly from a lack of funding and also from increased apathy towards such activities in relation to the completion of other potential projects in the urban environment. As such, as demonstrated earlier, Oxfam’s own projects in La Ciénaga (e.g. Pelling 2010), but also other NGO projects elsewhere in the country, have sought to focus attention on community disaster mitigation and preparation (e.g. see Pelling 2010) precisely because they are important areas which are areas often overlooked by the state.

In Samaná, while nobody directly mentioned the existence of Law No. 166-03, interviews with municipal leaders suggested that a lack of funding and resources (among other factors) from central government meant that they were not engaging in any disaster mitigation and prevention activities at the city level. This suggesting that little progress in seeking and diverting funding for such activities has been made since the publication of the IFRC report in 2013. Although the consequence of this was that the emphasis remains exclusively on disaster response this was not envisaged as being overly problematic in Samaná by those engaged in disaster response on the basis that large scale disasters were not considered to be a particularly great threat to the city. Unlike in Santo Domingo however, no external organizations were directly working in the field of DRM, with a particular emphasis on mitigation and preparation, in the city of Samaná. This perhaps as a result of the area being considered as lower risk of disaster in comparison to other areas which may take priority.

That is not to say that climate change and the need for adaptation was necessarily on municipal agendas in relation to the urban environment either. Interviews with officials indicated that, at the municipal level the climate change debate was still more heavily framed towards mitigating the effects of climate change rather than adapting to them as explained here by a senior member of the Ministry for Environment and Natural Resources who often are the technical and implementing agency for CCA in the Dominican Republic:
Ignacio: The subject of climate change is new. Relatively new. They have only been running workshops since last year on how to approach this subject. They are trying to capacitate specialists from within the Ministry [of Environment and Natural Resources] so that they can approach it. Because the idea is to reduce the human actions that affect the climate in terms of the pollution from certain products and other things that have a direct impact on the Ozone Layer…

HS: So would you say then that the emphasis is currently mostly on mitigation?

Ignacio: Exactly, we are preparing to work on mitigation. Currently we are in a phase which is training staff, because it is a new subject, we are still in the preparatory stage. (Interview Ignacio 30.10.2014)

In so far as adaptation is on the radar the focus remains entirely on natural and environmental systems rather than urban environments. Samaná provides a clear example of this. Much of the research in relation to CCA has been led by local NGO CEBSE (Center for the Conservation and Eco-Development of Samaná Bay and its Surroundings) in conjunction with other agencies including The Ministry of Environment and Natural Resources and The Nature Conservancy and with funding from USAID. CEBSE’s mandate is to engage communities in the conservation and sustainable use of the Bay of Samaná and the natural areas in its surroundings, across the whole peninsula and they have been successful in attracting large quantities of funding from international sources to carry out projects geared towards this. So whilst uniquely, their work on climate change often engages with communities, given the aims of the agency, the focus of their work tends to be geared more towards the natural and rural, rather than urban environment (e.g. Lamelas and Reyna Alcántara 2012). Recent initiatives led by CEBSE that Ministry of Environment and Natural Resources members stated the institution had been involved in included coastal management projects aimed at halting erosion and saltwater intrusion and protecting mangroves and coral reefs (Interview Ignacio 30.10.2014).
A significant challenge to expanding the focus to incorporate a consideration of the urban environment relates to the existence of localised climate information as well as the capacities of local actors other than those focusing on the natural environments such as CEBSE, to interpret such information, thus enabling them to be able to make informed decisions about adaptation.

Whereas local actors engaged in DRM such as the Civil Defence volunteers and Fire Department as well as actors in the Ministry of Environment, generally discussed, with confidence, their departmental response procedures should an alert be made by central authorities, the same cannot be said for actors engaged in CCA who were less sure of exactly what the local, rather than national, regional or global implications of climate change were likely to be and therefore how to act upon them. This was particularly the case in light of their now reduced mandate to engage in climate change adaptation since the creation of the National Council for Climate Change and the Clean Development Mechanism.

As part of their ongoing work in the country in relation to adaptation, USAID have funded and developed a Diploma in Climate Change in collaboration with The Nature Conservatory, IDDI and the Technical Institute of Santo Domingo. The main object of the programme is to build knowledge and understanding of climate change and adaptation among civil servants in various municipalities of which Samaná is one, and the National District in which La Ciénaga is located is another. The course covered the following subject areas all framed within the context of adaptation to climate change; an introduction to climatology, analysis and teaching tools, environmental models sustainability, project development and local empowerment, planning and sustainable land use. After completing the course, the idea is that the civil servants return to their municipality and embark on a process of information dissemination through organised talks in schools and other public forums (Interview Perez 25.04.2014). Although civil servants in Samaná stated that they had delivered talks on what they had learned and assured me that I could attend the next organised event, ultimately none of these took place during the time I was in the Dominican Republic and consequently I was unable to see first-hand the dissemination of the information that they had
acquired. That said, they were more than happy to share their resources and their PowerPoint presentations with me, providing me with a decent insight into the information being disseminated.

This material, such as the PowerPoint presentations and interviews with an official who had gained the diploma suggested that knowledge and understanding as to exactly what the climate change implications were for the local rather than national level was low. Indeed USAID (2013: 33), in their Country Development Cooperation Strategy (see Appendix Five) also recognised that a major barrier to adaptation in Samaná is that existing information on climate change refers to the regional (as in Caribbean region as a whole) or national levels and this has not yet been effectively channelled to local and municipal actors.

Although awareness raising about climate change is certainly a positive, the framing of the issue in terms of the global, regional or national impacts runs the risk of overlooking the local impacts and people’s responses to them. It also makes climate change appear to be more of an abstract threat to the local population rather than an actual one and could potentially make the issue more difficult to engage with for a variety of actors at the local level. Especially in a context where weather impacts are often not a priority in relation to other, more pressing concerns.

Another concern raised by USAID (2013: 33) which this research also identified at the local level refers to the accessibility of the existing information in light of the institutional, technical and human capacity issues that exist. Interviews with workers within the Ministry of Environment and Natural Resources suggested that currently they felt as though much of the existing climate information was overly scientific and difficult to engage with. As one official expressed:

…[T]he subject of climate change requires a lot of scientific information that we do not manage. Many of us [in the Ministry of Environment] have experience, are older, we have a certain level of education but
there are things that we do not know and are not up to date with. That is the truth. That is the reality (Ignacio 30.10.2015)

Given the apparent lack of focus on planned adaptation in the urban environment, it is not surprising that a consideration of autonomous adaptation and its subjective influences such as the sense of place were also not yet on the radar at the municipal level.

Discussions with health workers, doctors and officials in the Ministry of Health revealed a similar situation, i.e. that climate change is not firmly on local or national health care agendas at this stage, as the following statement from a Ministry of Health Official indicated:

‘In reality we don’t understand…I’m just going to tell you the truth…we do not have any kind of plan with reference to global warming. We try to publish recommendations for the population, say, if the temperature is very high then the Ministry of Health does activities that promote health such as messages of guidance to the population about how to care for themselves in temperatures which are higher than those to which they are usually accustomed. But in terms of a strategic plan to face the impacts of global warming, we don’t have that.’ (Dr. Ramon 13.10.2014)

Other than these public service type announcements relating to heat, the sectors approach reflects national as well as donor approaches to the subject of health and climate risk management. That is to say one that is framed in terms of Disaster Risk Management in general and disaster response in particular with a particular focus on the spread of disease. One ministry official in Samaná explained that they were in possession of various health contingency plans to which they would be able to refer in the event of a disaster. I was unable to see such plans first hand because they had been misplaced during a recent office reshuffle and the official was unable to locate them. Promises to forward electronic information, which we likewise had not been able to locate that day, failed to materialise.

The official explained that the plans had a section for each disease considered to be a threat and were mostly concerned with aspects relating to
how to prevent them from spreading in post-disaster situations and how this information could be disseminated among the affected population. The importance of disease control and monitoring was seen to be particularly relevant given the strain that the chikungunya virus was placing on health care systems at that point in time and the impact that cholera had on the population following the 2010 earthquake in Haiti (Interview Dr Ramon 13.10.14). This concern was reflected in approaches to healthcare in Wilmore where the healthcare centre was actively monitoring and mapping current health issues at the household level as shown in Figure 7 which marks some of the households with a resident suffering from a disease of some kind (ranging from chikungunya to HIV). That said however it was clear that the sector in general suffered from a lack of localised projections as well as their consequences for the health care sector. At the community level, community health workers in Wilmore expressed that they were not informed about climate change or its likely health impacts although they tended to guess that the main impacts based on their localised knowledge of existing health issues would be related to viruses such as chikungunya or on heat stress particularly for the elderly (Interview Mariana 18.08.14). There was no indication that mental health considerations were a subject of concern either in relation to disaster events or the slower impacts of a changing climate.

Figure 7: Community disease mapping in Wilmore, Samaná.

Source: Health Centre Barrio Wilmore, Samaná.
The department for culture similarly explained that they were not in any way engaged with the issue of climate change at this moment in time and particularly in Samaná were focusing instead on activities that celebrate local culture and raise the peninsula’s tourist profile (Interview Francisco 01.12.2014).

4.5 Conclusions

This chapter has explored the subject of Climate Risk Management in the Dominican Republic from the two differing perspectives from which it is commonly approached; Disaster Risk Management and Climate Change Adaptation. The aim of the chapter was to situate the research within the policy debates and examine the extent to which current institutional and policy mechanisms in DRM and CCA already explicitly or implicitly allowed for a consideration of the role that subjective factors such as the sense of place play in shaping urban poor adaptive capacities to climate change.

The chapter suggests that in the Dominican Republic these two separate perspectives continue to function independently of one another with little if any coordination between them (see also UNDP 2013). Additionally DRM has typically been prioritised in the country as reflected by the more developed institutional structure and greater quantity of DRM activities taking place within the country.

Despite increasing attention being placed on adaptation in recent years, the climate change debate is still framed as having greater impacts on natural, environmental systems with the response framed and understood more in terms of mitigation. Although a focus on the natural environment is also undoubtedly crucial, impacts in urban centres should not be downplayed. This research will show and that of Moser et al. (2010) has shown that low-income urban residents are also feeling and responding to its impacts. Despite this, they are not yet on national or local policy radars.

In so far as CCA is considered in the urban environment, this remains framed in terms of the need for DRR (see also Moser et al. 2010). However, as highlighted in Chapter Three residents actually stated that issues related to
rain and heat were actually more problematic to them on a day to day basis. Even in La Ciénaga in Santo Domingo and Las Colinas II in San Pedro de Macoris which are both located in an area of the country that is considered to be at high (rather than medium) risk to disaster events, residents stated that issues relating to severe rather than extreme weather were more problematic for them than disaster events which actually impact infrequently.

According to Moser et al. (2010 vii) this framing has some benefits in terms of policy development and implementation because it creates a sense of urgency in response. Indeed the Dominican Republic has been shown here to host an extensive DRM institutional and policy framework and also a wealth of development agency DRM projects. These projects ought to be celebrated for encouraging a shift in the focus at the community level from disaster response to the earlier stages of the DRM cycle such as mitigation and preparation although progress to do the same at municipal and national levels is yet to fully take hold. However, Moser et al. (2010: vii) also note that this perspective creates a significant ‘blind spot’ in relation to the other actual impacts experienced by residents which are not visible through the disaster lens. The concern is that in framing the urban CCA debate in terms of disasters, the adaptation needs and priorities of residents in communities like Panchito, Wilmore and La Ciénaga, as well as those in urban centres in places such as Kenya and Nicaragua (the focus of the study completed by Moser et al. (2010)) will be overlooked. This suggests the need for a more holistic approach to Climate Risk Management in the Dominican Republic (and beyond) which recognises the threats posed by disasters as well as the range of other climate impacts to which urban environments are exposed.

Steps towards enhancing CCA in low income case study communities in the Dominican Republic are further complicated by the lack of capacity, in terms of accessing and interpreting existing climate change information among those who would have responsibility for developing and implementing local CCA initiatives as well as a lack of clear responsibility for CCA activities.

Given such gaps in knowledge and abilities in relation to what climate change means at the local, urban level as well as how to effectively respond to its
impacts it is perhaps unsurprising that the intangible impacts such as those relating to the sense of place are not yet on policy radars either at any level from the national down to the municipal. The issue of climate change and culture, one of the potential institutional homes that could incorporate considerations of the sense of place into ongoing programs, infrequently features in adaptation policy and when it does it is certainly not considered to be a priority area of concern. The interaction of climate change and health, the other potential institutional area within which the sense of place may be considered, remains framed in terms of tangible and physical health impacts associated with diseases rather than the less tangible, mental or psychosocial impacts.

This lack of consideration of these factors take place within the context of emerging recognition, at least in academic and international level policy debates as demonstrated in Chapter Two, that climate change is provoking physical changes to certain environments and that these are causing a range of intangible consequences and impacts for people associated with them. Furthermore Chapter Two also showed there is initial though increasing recognition that the way that people feel about those locations may impact upon the strategies that they adopt in order to respond to those changes. Indeed, as mentioned previously, these weather impacts are both felt and responded to in local places such as houses and communities in the urban environment yet the local has been somewhat missing from policy approaches to adaptation in the Dominican Republic and opportunities to understand these dynamics, overlooked.

This therefore sets the scene for the following empirical chapters. These subsequent chapters aim to contribute to this debate by narrowing the focus to the housing and community level. They seek to both characterise the urban poor sense of place and understand how it is impacted by disasters and severe weather associate with climate change but also what opportunities and challenges the sense of place poses for spurring autonomous adaptation in low income urban settlements.
As such Chapter Five briefly characterises the research communities in order to provide the context for the two empirical chapters that follow. Chapter Six and Seven seek to characterise the urban poor sense of place in relation to their houses and the case study communities respectively whilst exploring the ways in which this sense of place interacted with the strategies that the residents adopted to adapt to climate impacts.
Chapter Five: The Case Study Communities

Introduction

In Chapter Two, the research introduced the Dominican Republic as a suitable case study country location. It was stated that it’s SIDS and developing country status, high vulnerability to climate change impacts, high rates of both poverty and urbanisation meant that it would provide fertile ground within which to explore the sense of place and the impact that it has on adaptation and adaptive capacity.

Once in the country, the research sought to identify suitable urban poor case study communities. Their selection, which was described in Chapter Three, was based on proxy indicators of urban poverty levels identified by Moser et al. (2010). These were exposure to environmental risks, the presence of low quality and high density housing and deficiencies in service provision and tenure status. Ultimately three case study communities were selected. Two communities, Panchito and Wilmore, based in the smaller urban centre of Samaná and one community, La Ciénaga, in the capital city of Santo Domingo.

This chapter offers a more detailed introduction to the three case study communities in which the research was realised. The information presented was gathered whilst undertaking fieldwork in the communities in 2014 and has mostly been obtained from secondary data obtained through visits and phone calls to the National Office for National Statistics (ONE as per the Spanish acronym) as well as primary data gathered through observations, interviews, focus groups and informal conversations with residents and non-residents of the community.

In Santo Domingo, much of the information relating to La Ciénaga was provided to me by local NGO Ciudad Alternativa during the previously mentioned conference organised by them as UASD. It should be noted that
documentary evidence relating to the communities, particularly in Samaná is scarce, contradictory and contested. Despite having carried out a census in 2010, the only city map held at the Office for National Statistics in Samaná was an old hand drawn copy on which neither Panchito nor Wilmore had been recorded. A formal request for information was made to the head office in Santo Domingo however they had no record of the existence of Panchito there, despite the office in Samaná having some information relating to the population of the community which staff there stated that they had obtained from the head office.

The chapter is formed of five sections. Section one presents a brief overview of the main characteristics of each of the communities. Section two, three and four elaborate on the characteristics of Barrios Panchito, Wilmore and La Ciénaga respectively. Section five takes the characterisation process a step further an offers an introduction to some of the dynamics which shaped the social relations and which connect the communities to each other and to both national political agendas and wider national transitional processes.

5.1 Community characteristics: An overview.

<table>
<thead>
<tr>
<th>Community</th>
<th>Population</th>
<th>Housing</th>
<th>Legal Status</th>
<th>Exposure to weather events and effects</th>
<th>Ethnic Mix</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wilmore, Samaná</td>
<td>1264</td>
<td>High Density Self-Built. Varying Quality</td>
<td>Private Land. Large section of community subject to eviction orders.</td>
<td>Medium exposure to disasters. Some parts vulnerable to flooding.</td>
<td>Mostly of Dominican and Haitian decent.</td>
</tr>
<tr>
<td>La Ciénaga, Santo Domingo</td>
<td>18,317 (people) 4579 (houses)</td>
<td>Very High Density. Self-Built. Varying Quality</td>
<td>Declared public utility during the 90’s but without payment to private landowners.</td>
<td>High Exposure to disasters. Riverside residents highly exposed</td>
<td>Variety of ethnicities including high proportion of Haitians</td>
</tr>
</tbody>
</table>
5.2 Case Study I: Panchito
This section introduces the first case study community Panchito, based on information gathered during fieldwork in 2014-2015. The section examines the case study community under four headings: history and origins, location and appearance, housing and population and legal status.

Figure 8: Aerial view of Samaná and Panchito.

Source: Google Earth

History and Origins
According to long term residents, Panchito was founded during the 1970s. Prior to the establishment of the community the land was unused and covered entirely in vegetation, a characteristic of the community which still remains today. The barrio gets its name from the nickname of the agreed founder of the community, Namencio Balbuena who was the first to construct housing in the area which he later began to sell to other settlers.

Location and Appearance.
Panchito is located on vegetated hill side slopes to the North-eastern part of Samaná (see Figure 8). The community is accessible by short car or motoconcho (motorbike taxi) journey from the centre of Samaná. It has only
one main street named Calle Circunvalacion. This street runs across the south and east sides of the barrio and it the only road that is accessible by car. Other than this the community possesses a network of dirt paths which residents have cut through the vegetation that covers the hillside community, the presence of which is one key characteristic that differentiates Panchito from other urban communities in Samaná. In some parts of the community the residents have attempted to improve the conditions of the paths and to improve access to houses located away from the main road by laying concrete paths, steps and bridges. Barrio La Fortaleza Vieja borders the community on its south side and Barrio New York is located on its west side. Two ravines, referred to locally (and from hereon) as cañadas (also used to refer to open sewers in Santo Domingo) dissect the community.

Panchito’s topography varies with some parts being located on relatively flat or slightly inclining land and with other parts of the neighbourhood perched somewhat precariously on steep inclines. The housing density either side of the main road is particularly high and then tends to decrease with distance travelled up the hillside away from it. The same can generally be said for housing quality.

**Photo 10: Part of Panchito built on inclining land, from neighbouring community.**

Source: Holly Schofield
Population and Housing

According to the 2010 census held at the ONE office in Samaná, Panchito has a population of 395 (200 men and 195 women) but the residents contested this and felt the real figure to be significantly greater or that the 395 was more representative (although still a modest evaluation) of the quantity of households which would make the total population around four times that amount. Having spent time in the community and having seen the quantity of houses that there were, I would be more inclined to agree with the residents estimations. Long term residents agreed that the inhabitants of Panchito were either Samanese or had migrated from both rural and urban parts of the Dominican Republic. Residents also noted that a small proportion of the community were of foreign, usually Haitian decent.

One of the more striking features of the community is the variation in size and quality of housing. Those located by the roadside tend to be of the highest quality (See Photo 11) although there are pockets of higher quality housing in other parts of the community too. These houses vary in size, some are fairly small, others larger, comprising of one or two floors. They tend to be constructed from breezeblock, with iron (bars) protecting outside spaces or window spaces. Internally these road size houses tend to have a kitchen, bathroom, main room and separate bedrooms which are often shared by family members.

**Photo 11: Example of some roadside housing in Panchito, Samaná.**

Source: Holly Schofield
With distance travelled away from the road houses again tend to vary in size and quality, some are constructed from mixed materials such as block, wood and tin, and may have one main room, a kitchen area, one or two shared bedrooms and an outside latrine. Others are constructed solely from wood and tin with only one internal room and separate bedroom shared by the entire family. They almost all have an outside space for cooking on wood or charcoal and for washing and bathing. Some households have an outside latrine for their individual use while others share a latrine with neighbours.

**Photo 12: Hillside housing Panchito.**

![Image of hillside housing](image)

Source: Holly Schofield

**Photo 13: Shared latrine Panchito.**

![Image of shared latrine](image)

Source: Holly Schofield
Internally, the lower quality housing has all, part or no concrete floors. A number of the lower income families in possession of a concrete floor. From the highest altitude and lower housing density parts of the community residents look out over Samanə Bay. While some of the residents in this area expressed an appreciation of space and beauty in this part of the community the houses here were amongst the most exposed to extreme weather, such as hurricanes, strong wind and rain. These houses tended to be in the worst condition precisely because its distance from the main road and relative inaccessibility meant that the cost of making improvements to them was increased due to the need to pay for the materials to be carried through the community by labourers or on packhorses.

**Legal Status**

Panchito has formed on state owned land and few residents possessed official and legal land titles. Some community members recounted that in the early years, the state forcibly resisted construction on parts of the land, and that to date they remain subject to an ongoing legal dispute over the community’s legal status. That said residents tended not to take this too seriously with actions from the municipality, such as service provision seeming to offer a level of legitimacy to the community’s existence.

**5.3 Case Study II: Wilmore.**

This section introduces the second case study community Wilmore. Again, the discussion centres on; history and origins, location and appearance, housing and population and legal status.

**Figure 9: Aerial view of Samanə and Wilmore.**

Source: Google Earth
History and Origins

Wilmore is one of, if not the largest of Samaná’s urban barrios. Many of the long term residents settled in the community following their forcible eviction from other parts of Samaná by the Balaguer regime in the early 1970s under his plans to modernize Samaná. The community takes its name from the surname of the family that own the land on which it is situated.

Location and Appearance

Wilmore is a sprawling community built on inclining land that borders the main road from Sánchez at the western entrance to Samaná. Located next to the city market and central main bus terminal the community is accessible from the town centre by foot, motoconcho or by car. A second asphalt road which runs almost parallel Samaná’s main road dissects the community on its south side and a third borders the community on its west side. The road to the south and part of that which lies to the west are the only ones within the community that are accessible by car. Other than these, the community possesses a network of self-made, narrow mostly concrete paths (although some dirt paths are still present) which weave around the houses. Two cañadas dissect the community and run eastwards down to the esplanade leaving the residents in the houses at the side of them vulnerable to flooding during periods of prolonged or heavy rains.
Population and Housing

According to the ONE Wilmore has a population of 1,264 of which 625 are male and 639 are female although again residents contested this feeling that this figure was more representative of the number of households. Residents of Wilmore stated that the community was composed of Samanese inhabitants and migrants from other parts of rural and urban Dominican Republic. Many residents also stated that the community has a growing Haitian population.

The community is characterised by high density, self-built housing. Houses again vary in size and quality. The majority are made entirely from cement block and tin although there are pockets of less consolidated housing made mostly or entirely from wood. At the more consolidated end of the scale houses have tiled internal floors, separate bedrooms, kitchen and bathrooms and the potential for the construction of a second floor. Those at the opposing end of the scale have wooden internal floors, one room used as a kitchen and bedroom to be shared by the entire family and an outside, often shared latrine. A range of housing size and quality lie in between the two extremes.
Photo 15: Example of low quality house Wilmore.

Source: Holly Schofield

Photo 16: Roadside houses in Wilmore.

Source: Holly Schofield

Legal Status

Wilmore has formed on private land and from June 2014 until mid-2015 large sections of the community were subjected to eviction orders. That the community has formed on privately owned land is accepted but many of the residents take offence to being labelled as land invaders on the basis of the length of time spent living in the community (in some cases over 30 years) or because they originally had written permission from the land owners to construct there which over time this has been forgotten and the evidence lost.
Many felt as though they had at least tacit permission from the owners to construct there on the basis that many of the landlords and their family are also residents of the community and could have stopped people from building houses at any time. Consequently while many residents consider themselves to be home owners, few if any have legal land titles for the areas they occupy. In December 2015 I was informed that community action to fight against the eviction has resulted in the process coming to a halt while the state seeks a solution with the landlords.

5.4 Case Study III: La Ciénaga

This section introduces the third and final case study community La Ciénaga. As with the previous two case study communities the discussion again centres on; history and origins, location and appearance, housing and population and legal status.

Figure 10: Aerial view of Santo Domingo and La Ciénaga.

![Image](source: Google Earth)

History and Origins

La Ciénaga is one of the oldest of Santo Domingo’s barrios. It is thought to be inhabited in its current form from the late 1950’s when the land was seized from the wealthy land owners by the Trujillo dictatorship, made public property and residents, evicted from another part of the city, were forcibly settled there (Cottam 1998). The status of the community was changed to protected green belt in 1975 by the Balaguer regime with a different vision for that part of the city. This sparked periods of conflict over decades with the state with the latter
changing between tolerating the community’s illegality and then both threatening and at times carrying out forced evictions (Cottam 1998). The land was again declared public utility in the 1990’s.

Today La Ciénaga is thought to be a diverse community contained of a high proportion of people who emigrated from rural areas particularly during the 70’s and 80s. Residents noted that the community was also made up of foreign residents, particularly Haitian nationals.

Location and Appearance

La Ciénaga, which translates to marsh or swamp, is one of several communities that lie along the banks of the river Ozama which separates west and east Santo Domingo. It is the last low-income urban community on the western side before the river joins the Caribbean Sea.

The large, sprawling community has mostly been constructed on top of the silt and rubbish deposited by the river. As such the ground, although mostly cemented is relatively unstable with residents frequently expressing that they can feel the ground shifting at times and that many houses are sinking into the silt. La Ciénaga is accessible by bus from the city along the Francisco del Rosario Sanchez Avenue on the community’s west side or by motor taxi from the south. Barrio Guachupita borders La Ciénaga on its north side. A network of (mostly) cemented roads of varying quality and size cut through the community. Some of these are accessible by car, others only on motorbike and/or foot, particularly those at the riverside which have not been cemented.

The community is mostly flat and low lying although there are some steep inclines inhabited by residents close to where La Ciénaga meets Guachupita. Five cañadas, many of which are quite heavily polluted, dissect the community and can cause extensive flooding during heavy rains. Photo 17 shows one of the many entrances to the community which stretches to the bridge in the distance from Francisco del Rosario Sanchez Avenue.
Photo 17: One entrance to La Ciénaga.

Population and Housing.

According to the ONE (2010b) the population of La Ciénaga in 2010 was 18,317. The barrio is characterised by very high density housing of varying quality. Many of those situated at the riverside are of particularly low quality, constructed of wood and/or corrugated iron. Internally these houses had one or two rooms shared by the whole family and used as a living room and shared bedroom. Some had no toilet, latrine or running water. The floor of these houses tended to be made from broken cement, commonly referred to as ‘filling’ which residents pack down into the silt, adding more overtime as it becomes absorbed. They then cover the filling with cardboard to soften its feel and as an attempt to absorb more moisture.

Away from the river’s edge houses are more consolidated and varied significantly in terms of size and quality. Much of the houses are constructed out of cement block or wood and iron. Many have access to running water (although there are pockets of houses that do not). The houses here tend to be one or in some cases two storeys, with iron bars protecting doors, windows and balconies among those that have constructed a second level. Internally these houses tended to have kitchen and bathroom main room and kitchen with separate albeit shared bedrooms all divided off by curtains.
Photo 18: Rooftops of riverside shacks, La Ciénaga.

Source: Holly Schofield

Photo 19: Example of housing density in parts of La Ciénaga.

Source: Holly Schofield

Legal status.

As previously mentioned the land was declared public utility in the 1990s. Some residents were in possession of a proof of purchase or ownership but none that I spoke to were in possession of legal titles for their houses.

5.5 Local social contexts.

In order to offer a deeper contextualisation of the community characteristics, this section will reflect on some of the influential factors related to three key
areas that shaped the local social relations across the case study communities and the broader national context. The section starts by examining the role of race, class and ethnicity, before discussing family and transnational mobility before turning the focus to the formation of fictive kinship relationships, in particular the role of ‘compadrazgo’.

Race, Class and Ethnicity

Despite there being ‘limited’ racial, linguistic and religious differences in the Dominican Republic, the issue of race and colour remain of fundamental importance in Dominican society (Howard: 2001: 1). Racial differences, Howard (2001: 1) points out, ‘are manipulated through the unequal standing and significance given to European, African and Indigenous ancestries. European and Indigenous heritages have been celebrated in the Dominican Republic at the expense of an African past’. The separation of these heritages has been further spurred on by the somewhat tense relationship with neighbouring Haiti which has in turn played a key role in the shaping of the Dominican identity (Howard 2001). This has been played out most profoundly through notions of race and nationalism. Howard states that in the Dominican Republic, the history shared by the two states is stressed through ‘a racially-constructed fault line has arisen from this territorial and historical association’. Race is central to Dominican nationalism, a nationalism characterised by a pervasive racism which centres on the rejection of African ancestry and blackness (negritud). Blackness is commonly associated with the Haitian population whereas Dominicaness (Dominicanidad) celebrates whiteness, Hispanic heritage and Catholicism.

Issues of race and ethnicity were ever present in all case study communities. The Dominican fixation on race has resulted in the development of a rich terminology to describe skin colour (see also Valdez 2002) which often, though not always, corresponds with a type of socio-economic class hierarchy (see Howard 2001). To be ‘Blanco/a’ is to have the favoured white, European skin and often commanded a higher level of respect from other residents (and undoubtedly beyond) particularly when it aligned with commonly held
perceptions of the level of class status and wealth possessed by that
individual; and which is often presumed to accompany whiteness. However, it
often brought these residents a certain level of perceived responsibility for
providing support to less wealthy neighbours who at times turned to them for
(usually financial) help when in need as will be discussed in greater detail
later in this section and then again in Chapter Seven. In addition to ‘Blanco/a’
Dominican’s used the term ‘Trigueño/a’ to describe someone with olive
coloured skin and to be ‘Moreno/a’ is to have darker coloured skin again.
‘Mulato/a’ was used to describe a person of mixed race origin. Finally, to be
‘Negro/a’ is to be black and ‘Negro/a Alisado/a’ is to be black but with the
more favourable straight and therefore more European (rather than afro-
Caribbean) hair. Although at times used affectionately between friends as a
descriptor or nickname, the term ‘Negro/a’ was also frequently used as an
insult between Dominicans during times of conflict and even more often used
towards Haitian people who often find themselves subject to an intense
racism commonly termed ‘anti-haitianismo’ which will be discussed in greater
detail below (see Sagas 1993).

The Haitian presence in the case study communities was somewhat varied in
terms of size and make-up and this also represents their presence in terms of
the wider national context. Haitians in the Dominican Republic are by no
means a homogenous group. Rather, they are comprised of a small group of
documented and legal migrants; a large community of long term residents
who were born in Haiti; and a floating, transient population of temporary
Haitian migrant workers. A significant and separate community is comprised
of Dominico-Haitians, people of Haitian origin born in the Dominican Republic.
This category includes differing generations, as well as individuals born to one
or more Haitian parent (Ferguson 2003).

Anti-haitianism was certainly noticeable within the communities and beyond. It
is widely thought to be actively promoted at the national level generally (e.g
Sagas 1993) but in particular during the field research period which followed a
controversial court ruling in 2013 which stripped the children of foreign
parents of their citizenship retroactively to 1929. Although technically
applicable to all foreign nationals in the country, the general sentiment was that it was a law aimed towards Haitian migrants, who would be disproportionately affected by it. It was also threatening to make tens of thousands of Dominican born individuals of Haitian descent face possible statelessness. International outrage and pressure following the ruling led the Dominican government to pass a subsequent law allowing those decedents of undocumented foreign parents and other undocumented migrants to register as foreigners, with the possibility of applying for naturalisation after two years albeit with fewer rights in certain areas than afforded by their Dominican by birth counterparts. Registration was open until mid-June 2015 and those which had failed to do so by this time were facing possible round-up and deportation.

This anti-Haitian sentiment is also reflected in their very obvious social and physical and exclusion in the case study communities and beyond. As mentioned briefly in Chapter Two, Haitian migration into the Dominican Republic over the past half-century was initially primarily driven by the demand for workers in the sugarcane industry. As such a great number of Haitian’s in the Dominican Republic typically resided in rural settlements close to or surrounding sugar cane mills and plantations, known as bateys. Bateyes continue to possess some of the highest rates of poverty in the country and few if any services whilst the residents work long hours cropping sugar cane. Increasingly however Haitian migrants are also found to be working within the construction and tourism sectors. In the urban environment, Haitian migrants employed in these sectors usually lived in low quality rented accommodation, at times families doubled up with other families to keep living costs to an absolute minimum and usually with some of the greatest exposure to weather events.

Time spent in the communities suggested that La Ciénaga was home to a significantly greater quantity of Haitian residents spanning the aforementioned groups than the communities in Samaná. Within Samaná, Wilmore was home to more Haitian residents than was Panchito. The research suggests that Dominico-Haitians tended to be more imbedded and possessed greater social
ties with local Dominican residents, usually through church groups, than did migrant groups. Many Dominico-Haitians had never visited Haiti, they spoke fluent Spanish and had varying commands of the Creole language. Some young Dominico-Haitian women took pride and ownership of this dual-ethnicity. They commonly referred to themselves as ‘rayadas’ meaning ‘striped’ and in doing seemed to be almost challenging the stigmatization of their Haitian identity. The same level of social integration appeared not to be available to the other groups, or at least not on the same terms. As mentioned previously male Haitian migrants were most frequently employed within the construction sector. Their propensity for exploitation in this sector is well known (e.g see Ferguson 2003) but at the community level, the Haitian’s increased knowledge and experience in construction meant that this was one of only a few areas in which there was a level of more civil interaction between them and their Dominican neighbours with some local Haitians being contracted to carry out local construction projects including building churches, houses and contention walls.

Family, Emigration and Remittances.

Family was an important part of everyday life in all of the case study communities. Residents had often subdivided land to ensure that family members remained in close proximity and benefited from the range of social, physical and economic support networks that this provided. These relationships and their impacts on people’s adaptive capacity in the community will be explored in greater detail in Chapter Seven. In addition to these localised dynamics, family ties played a central role in shaping the development of the communities through transitional processes associated with emigration and remittances. A number of residents across the communities, or their close relatives had at some point in their lives, successfully emigrated (or unsuccessfully attempted to emigrate) to Puerto Rico and then on to the mainland USA. Those whom had been successful tended to send remittances back to the family members remaining in the communities. Families indicated that a percentage of the regular remittances were typically invested in making modifications to the family house. This
meant that in a number of cases neighbours of seemingly similar social economic status could live side by side in very different qualities of housing and levels of housing consolidation and seemingly different levels of vulnerability to localised weather impacts.

Despite the use of the proxy indicators for urban poverty outlined earlier in the chapter, it is important to note that the communities were diverse environments. Although home to a high quantity of low-income residents they were also home to residents with much greater economic potentials who were living in much larger and more consolidated houses, potentially taking advantage of the comparatively cheaper costs that accompany constructing on untitle\text{d} land. The diversity of the social groups, which was also at times shaped by notions of race, ethnicity and class discussed earlier, shaped community dynamics and neighbourly relations in ways that draws similarities with the phenomenon ‘comparazgo’. This will be discussed in greater detail below.

Fictive kinship: Compadrazgo

The different economic statuses of some neighbours living in each of the communities in each of the communities as well as the presence of a number of female headed households lacking in the close family bonds described earlier had given rise to formation of exchange relationships between neighbours which facilitated the transfer of support, goods and services between households. These exchanges, as will be discussed in greater detail in Chapter Seven varied in their scale, type and frequency among different households. The relationships that neighbours had formed were often somewhat similar to a type of exchange relationship known as ‘compadrazgo’ and affected social dynamics in the communities in two key, yet differing ways which will be introduced here but further expanded upon in Chapter Seven.

In her research on ‘compadrazgo’ among the urban middle class in Chile, Adler-Lomnitz (2012) notes that participants understood ‘compadrazgo’ as acting as a way of obtaining necessary and sought after support in a’ way that is quicker and easier than may otherwise have been possible through
alternative channels. In Adler-Lomnitz's (2012) analysis, this support is given and received within the spirit of friendship and without feelings of obligation however the provider always remains aware of the potential future benefits that their actions may attract for themselves, a close friend or family member should they themselves need a favour to be returned at a later date. Although the dynamics of this interaction and the types of support sought between urban middle-class in Chile, (which was the geographical focus of that particular study), and between the urban poor in the case study communities discussed in this research are undoubtedly different the sentiment remains the same in certain cases. As Chapter Seven demonstrates, in all communities, it was not unusual to see women who were the head of their households having formed strong links with another female neighbour or community residents and this relationship provided an important means of accessing the type of support open to other residents that were living in close vicinity of their other family members ranging from the provision of food items to undertaking childcare duties or helping with chores for example.

Adler-Lomnitz (2012) suggests that this type of ‘compadrazgo’, based on friendship, should be differentiated from the catholic ritual of fictive kinship that possesses the same name. However, in the case of the Dominican case study communities the local social dynamics suggested that parallels with this form of compadrazgo could also be drawn. ‘Compadrazgo’ in relation to the catholic ritual remains a customary Latin American practice of fictive kinship. It often involves a family of a lower socio-economic status strategically choosing a person who has access to resources as the godparent of their child with the aim of forging a long-term bond with that person. The relationship then calls on the godparent to bestow measures of goodwill upon their godchild and family and in return enhance their prestige by gaining a loyal following (see Hilgers 2012). This relationship remains pertinent within the context of the case study communities because of the differential power dynamic associated with residents of higher and lower economic statuses that were living side by side. As Chapter Seven will explore in greater detail, it was not uncommon in the communities to see a resident of lower socio-economic status seeking out and maintaining strong friendships with their wealthier neighbour and while
this link was not always consolidated by the wealthier resident becoming the formal godparent of the neighbours child, the objectives of the friendship were often the similar. Lower income neighbours frequently turned to their wealthier counterparts for support (usually financial), in return they would often find non-monetary ways to pay back the neighbour and maintain the relationship. When the wealthier neighbour did bestow acts of goodwill upon their neighbour, it was often well known within that area which offered the donor a certain level of respect from those around and a slightly increased social standing.

5.6 Concluding remarks.

This chapter has introduced the three case study communities within Samaná and Santo Domingo in order to situate the research and provide the context for the empirical chapters which follow. The next chapter explores the urban poor sense of place in relation to the house, the first localised unit of analysis. It also discusses the ways in which this sense of place interacted with the strategies that the residents adopted to adapt to climate impacts.
Chapter Six: The House: Keeping up with the Neighbours as Adaptation to Climate Change?

Introduction
This chapter represents the first of the two main empirical chapters of this thesis and explores the role that the sense of place, in relation to housing, plays in the adaptive strategies and capacities of the urban poor in the three case study communities.

The chapter is based around the conceptualisation of the sense of place as being formed of the three narrower concepts; place dependency, place attachment and place identity. These concepts, which have been separated here to enable clarity of discussion, are in fact interlinked and overlapping. Section one will examine the concept of place dependence with reference to the three case study communities. Section one looks into the implications of place dependence on the ways in which disaster and climate impacts were experienced as well as how it shaped responses to them. Section two focuses on place attachment and the ways in which the interactions that take place with and within the home can increase its sentimental value. It investigates how attachments to the home, or a lack thereof, interacted with capacities to respond to disaster and severe weather events. Section three turns the focus to place identity. It discusses the ways in which housing provided residents with a means of manifesting, monitoring and developing their own identities in relation to the environment but also how the key principles of place identity guided or inhibited action in the face of disasters and severe weather. The final section concludes by drawing together the main findings of the chapter.

6.1 Place dependence and the house.

This section characterises urban poor place dependence in relation to the house in the three case study communities. As discussed in Chapter Two, place dependence refers to the evaluation that an individual makes of a place-based on the availability of physical and social resources that allow them to meet individual needs and achieve goals and aspirations when compared to
other places (Stokols and Schumaker 1981). Frequently residents’ personal goals and aspirations were shaped most profoundly by the desire for homeownership and desire to consolidate the house. Each will be discussed.

Homeownership and consolidation.

Urban poverty research has long established that housing is the most important asset of the urban poor and also the first one that they seek to possess (e.g. Moser and Holland 1997, Moser and Satterthwaite 2008, Moser 2009). This stems from its ability to protect households, as well as their extended families, from falling into extreme poverty as well as allowing for the accumulation of other important assets over time (Moser 2009).

Residents in all of the case study communities certainly celebrated these positive economic benefits of homeownership and those living in rental accommodation cited them as key reasons for why they desperately hoped to become homeowners. The most frequently cited reason being the loss of money to private landlords or the opportunity to use the house as an active asset by subdividing it to make room for a business, usually a small convenience store known locally as a ‘colmado’. Parents often placed great emphasis on the need to own housing to have an asset to pass on to children and participant observation often revealed households making use of their space by renting out rooms to other people, or to family members in times of difficulty.

While many residents of the three communities were in possession of a proof of purchase, as discussed in the previous chapter, few, if any, of them were in possession of legal titles for the land on which they have built their housing. Those who had built a home and were no longer paying rent considered themselves to be homeowners and the land upon which it had been constructed was viewed as a separate legal issue. While legal land titles were certainly desirable, not having them was not seen as impacting upon their on the ownership of the house itself.
Although residents spanning the communities placed great importance on homeownership because it prevented the loss of their scarce financial resources to private landlords, they also indicated that there is an element of pride associated with being a homeowner suggesting that subjective motives also played a key role in shaping this aspect of their place dependence. As Sofia, a homeowner in La Ciénaga explained:

‘I feel proud of my house. It’s something to be proud of because not everyone has their own house. Even though the barrio is the way it is, not everyone has the privilege to have a house. Lots of people rent. In the part of the community in which I live almost all of the people rent. For this reason I feel proud because even though it is not a mansion I still fit in it’. (Sofia, La Ciénaga)

Manuela, a resident renting a riverside shack in La Ciénaga similarly expressed:

‘Look if someone can say ‘this is my home, made with my own sweat and tears’, then it is great to be able to say that it is your home. Because, ‘my home’, is to say that it is yours and you don’t owe it to anybody’. (Manuela, La Ciénaga)

The high financial costs associated with being a homeowner often meant that homeownership was a sign of a family or households economic success. This was also something which residents could then project by consolidating and decorating the house in line with their family’s aspirations and tastes, as will be discussed in greater detail later in the chapter. Indeed, housing consolidation and modification of different elements also played a key role in urban poor place dependence. For many residents, their hopes for the future and material aspirations were shaped around the modifications that they would like to make to their existing houses. As Manuela stated:

*HS:* What hopes do you have for your future?

*Manuela:* Well, that God gives me a way to make a future. My future depends on whether God gives me, at least this house. I, at least have to see if…it’s made of tin but with God above, I hope that I can make it from block, or even
Similarly Gabriella in Panchito, living in a low quality wooden and tin house, characterised her own hopes for the future in terms of her desired improvements to the house:

HS: What hopes do you have for the future?

Gabriella: Well to see if my husband does anything with the house because he wants to do something. To start...he’s wanted to put up a wall here for a while now.’ (Gabriella, Panchito)

The interviews suggested that the value placed by residents on homeownership and consolidation had implications for the ways in which they responded to climate events. This will be discussed in greater detail in the following section.

Place dependence, the house and adaptive capacity.

The importance placed by residents on homeownership combined with, deficits in the availability of affordable housing and a reliance on self-help as the dominant form of housing production, meant that low-income residents were more likely to make a positive evaluation of a place on the basis that it allowed them to construct a house there (often in combination with other family, as well as legal and financial considerations), rather than because they originally had an overriding preference to live in one area over another.

For the poorest groups excluded from formal private or public housing markets the more marginalised, vulnerable and exposed areas provided people with an opportunity to own a home that may not otherwise have been possible. As Carolina, who was a homeowner and long term resident of one of the most vulnerable areas of La Ciénaga explained:

‘The thing is we are so poor that there is nowhere else for us to live. Up above [the bridge] the houses are more expensive. Here there are
people that never had the opportunity to have their own houses but here that was possible.’ (Carolina, La Ciénaga).

In any case, the residents suggested that the importance placed on homeownership often outweighed that placed on the living conditions or risk of disaster that existed in such locations. This situation is very common in urban centres of the global South (Moser and Satterthwaite 2008).

Residents across the communities but particularly in La Ciénaga often expressed that disasters while feared events, are considered to be part and parcel of living in the Dominican Republic. Their impacts are also usually far reaching, often with national, rather than community level impacts creating a sense of inevitability that everybody will be affected (albeit, they accepted, to different degrees). The combination of this understanding of disasters, and the importance placed on homeownership meant that disasters and disaster risk had little impact on this aspect of residents’ place dependence.

Remaining in La Ciénaga, Manuela, a long term renter living at the riverside and who presumably possessed a marginally greater freedom of choice about where to reside stated that she would be happy to continue living in the same exposed location if she could own her currently rented house:

HS: So when you think of ‘home’ where do you think of?

Neighbour: When you think of home, do you think of having it here, or somewhere else?

Manuela: I think of having it wherever God gives it to me. If my destiny is to stay here and I, for example, this house would be mine then it is decided. Equally, if someone said, I’m going to take this woman somewhere else, I’d go. And it is for me to say, thank you God for giving me my home, for me. I’ve waited to have my own home but I’m waiting for an opportunity that God may give me. (Manuela, La Ciénaga)

A consequence of the need and desire to become homeowners is that these residents were often more able or willing to tolerate the frequent impacts of
severe weather, even if they were tiresome. This often manifested in the expression of a type of increased self-efficacy, or belief in their own ability to cope with such events, perhaps born out of a lack of alternatives, even if the level of exposure they faced meant that they were locked in a cycle of merely coping as was the case for many riverside residents of La Ciénaga.

In Wilmore, Joanna, who lived with her enlarged family in a house that was prone to flooding from the nearby cañada went as far as to say she felt as though they could tolerate the effects of the cañada during heavy rains because she owned rather than rented her house:

‘When the water enters the house you feel really bad. It really bothers you. But if you are in your own house that you are not renting and the water comes in, there can be lots of water, but then you don’t think about it until it is raining again.’ (Joanna Wilmore)

The literature on the sense of place has characterised person place relationships as dysfunctional when the relationship prohibits the individual from considering other, potentially more beneficial living options. Fried (2000: 202) states that dysfunctional aspects become more apparent:

‘...when the desire to cling to the fragments of a home which has been physically or socially destroyed persists against all possibility of living there again.’

This comment perhaps reflects the focus of such research which has typically been carried out within the context of ‘expanded options’ (Fried 2000: 202). Within the context of these three low-income communities, while there may have been elements of a dysfunctional person place relationship, to label it as such seems unfair and overlooks the complexity of the situation given the comparatively fewer alternative options open to these groups. Especially considering that residents, such as those living in La Ciénaga’s river bed expressed that although they generally liked the area, they would be willing to move if they were to be given alternative housing solutions elsewhere.
Despite the impacts of severe weather events, only in a handful of cases, such as among those living with extreme exposure, in the riverside wooden or tin shacks in La Ciénaga, did residents express that severe weather impacts were or had been the only or even sometimes one of the primary motivations for making or aspiring to make modifications to their houses.

In discussing past and future housing renovations with residents in all three communities, they generally stated a variety of functional motives for wanting to upgrade them. In Panchito and Wilmore termite activity destroyed the walls of a number of residents’ wooden houses from the bottom up leaving them structurally unstable even without a storm’s impact. For many of these residents, this was an important motive to convert to block walls. In La Ciénaga, cement block walls were valued for the increased security that they felt as though it provided in, what is essentially a very insecure community. For women participants, cemented flooring was sought after because improved the hygiene levels of the household and made cleaning easier. To convert from tin to cement roof was often a common goal because it left the option open for residents to add a second level to their house in the future, often to accommodate other family members or to incorporate some type of small business. Converting from wooden to cement walls and laying cement flooring was also favoured because it made the household appear less poor in the eyes of others as will be discussed later in the chapter.

Despite not always being primarily motivated by the desire to respond to climate events, having lived with weather impacts for a number of years, residents were often very familiar with localised issues. When modifying or constructing houses, whatever the primary motive, they took risks into consideration and often factored in ways to respond to them. For example, Sofia, a long term resident of La Ciénaga, lived for many years in a very basic tin shack. Previously she worked as a child minder and housekeeper for a wealthy Dominican family, and her dream was to be able to consolidate her own house at some point with her earnings from that employment. She mentioned that at that point she was the only one of her neighbours that had not converted from a tin to a cement block house. She had conveyed her desire to upgrade her house to her employers with whom she had and still
has a strong relationship despite their relocation to the USA. Before leaving they paid for Sofia to build her house from cement block. The area where she has constructed is prone to flooding during heavy rains which overflow the drainage system. She was also aware that parts of La Ciénaga are sinking overtime because they have been built on the silt of the river. As such, she took these localised risks into account when consolidating the house:

‘I’m not sure if you realised that my house is raised up, we built it like that because of the water, so when it rains and floods it won’t get into the house. But also because the houses are sinking with time, because of the water underneath. So I put mine higher so that even if it sinks it will be higher than the water when it floods.’ (Sofia, La Ciénaga)

This section has attempted to characterise place dependence in the case study communities and the impact that this has on people’s capacities to confront severe weather and disasters associated with climate change. The following section explores the same phenomena in relation to place attachment.

6.2 Place attachment and the house.

As discussed in Chapter Two, ‘place attachment’ is most frequently described as an affective emotional bond between individuals and places. The ways in which these bonds form are many and varied but include factors such as the physical interaction of a person with a place and also intangible elements such as memories and experiences accrued within it (see Low and Altman 1992). Each will be discussed in relation to the house.

Physical interactions with the house.

As previously mentioned, in the Dominican Republic a distinct lack of low-income affordable housing means that it is the norm for urban poor residents to live in self-built structures. These structures by their very definition require a high degree of person-place interaction. This process tends to start with residents acquiring land (although not necessarily with a legal title) and constructing wooden shack style houses which they then upgrade and
consolidate to varying degrees over the years in line with the household’s economic capacity. The end goal was often an individual, personalised variation of the brightly coloured cement block housing that characterised many of the urban barrios (even if attaining this was an unrealistic goal for many), with the added bonus of obtaining legal titles if possible.

**Photo 20: Example of desirable house in Panchito as expressed by residents.**

![Photo 20](image)

Source: Holly Schofield.

**Photo 21: Different housing in Panchito that residents aspired to attain.**

![Photo 21](image)

Source: Isabella, Panchito.

Although economic capacity tended to dictate how much of the work was carried out by builders or by the residents themselves, in any event, this long process spanning many years, was usually referred to as ‘un sacrificio’ (a
sacrifice) and this was because of the hard work and financial struggles associated with carrying it out. Houses therefore were often rich in emotional and sentimental value and existed as a tangible, proud reminder of that process. As Sara a long term resident and homeowner from Panchito indicated:

HS: What are the good things about living in Panchito?
Sara: Well, here I have my property, my house...For me it is good here because here is where I built my house. At least I don’t pay rent. I’ve been here for a long time fixing it up, you know? Everyone wants a house. (Sara, Panchito)

Some residents suggested that a lack of attachment as well as negatively held emotions towards houses did occur. A lack of attachment tended to manifest most in cases where residents had made little investment in the structure of the house or had stopped doing so for whatever reasons, and now felt as though the number of structural problems with it had exceeded their abilities to be able to effect changes that may considerably improve conditions. It was also significantly more common in situations where residents living with environmental risk or threat of eviction felt as though participation in a governmental relocation scheme may be offered at some point. This type of behaviour is closely linked to the process of ‘place detachment’ discussed in Chapter Two, whereby individuals and groups intentionally loosen existing place attachments in preparation for leaving (see Agyeman et al. 2009).

Angela, a long term resident and homeowner in La Ciénaga exemplified this point. She had lived in her incredibly low quality riverside shack for eighteen years yet demonstrated relatively weak attachments to it on the basis that she was living in the riverbed and that it allowed water to enter from every angle whenever it rained. Angela was head of her household with only one seventeen year old son. She worked informally as a childminder, at the time that we met, and for the last few years had been in receipt of the Tarjeta
Solidaridad\(^8\) which ensured that she was able to buy basic food items and gas to cook on. In the eighteen years that she had lived in the house, she had made little to no movement towards making small adjustments that would increase the quality of her living conditions, such as laying a concrete floor, that may at least lessen the smell, humidity and dampness and make cleaning after the very regular flooding easier. She herself had identified this as being the change she would most like to make to the house. This contrasted with the actions of some of her neighbours who had made some of these improvements. Although her case was certainly complicated by her low income and the difficulty of selling a house with such obvious vulnerability to the river, it was clear that Angela had no significant attachment to the house and instead expressed hopes that the government was going to recognise her plight and provide her with a house in one of the relocation sites, as had happened for some riverside residents in La Ciénaga and other riverside communities in Santo Domingo over the years.

**Photo 22: Outside of Angela’s riverside house in La Ciénaga.**

Source: Holly Schofield.

\(^8\) The ‘Tarjeta Solidaridad’ meaning solidarity card, is a type of debit card that provides beneficiaries that have been recognised as being in poverty with access to the state’s social protection network. The card, charged monthly to varying amounts depending on which benefits a person is entitled to and what level of need they have, permits the beneficiaries to make purchases in designated places.
Similarly, Emily an elderly resident of Wilmore, living in the upstairs of a house in disrepair which belonged to the family and caring for her two teenage grandchildren stated that she was hopeful, or in her own words ‘desperate’ that the proposed eviction of the community would take place as she thought it would mean that she would have to be given a new home of her own elsewhere by the government. Emily had spent most of her youth living in a different part of the country only returning to Wilmore as an adult. The part of the house that she now lived in was not only structurally dangerous but also was completely open on one side because it actually used to be the balcony. A number of holes in the roof meant that water entered the house during heavy rains soaking the inside yet she had no plans to repair them, instead opting for more reactive coping measures such as placing buckets and pans under holes and moving furniture during heavy rains. Although Emily’s case was also undoubtedly complicated by her age and limited income it also highlights the ways in which when residents who have not invested or who have stopped investing in improving their house can lose their passion for it, particularly as it begins to deteriorate, which is a necessary driver required to encourage place protective behaviours that support adaptation.

Residents with weak attachments to the housing structure did however continue to invest in some of the portable, transferable, material and aesthetic
elements that they used to adorn the inside to achieve a sense of homeliness and comfort. Indeed many residents’ understanding of what constitutes their home and their attachments to it, incorporated within that understanding, not only the physical structure of the house but also the contents used to fill, decorate and personalise the interior. This will be discussed later in the chapter. This understanding also incorporated the immediate outside space for those who had it.

In addition to these tangible elements, residents suggested that the relationship to the house was also shaped by intangible features. These related to interactions with neighbours and family, the experience of events and milestones accrued over the years in the structure and the feelings of love, comfort and security fostered by the environment. These intangible elements formed residents understanding of the metaphorical concept of ‘home’ which, in literature, has often been interpreted literally and become synonymous with housing (see Manzo 2003) but which residents were quite clear was not the same. During my introductory meeting at the Junta de Vecinos centre in Panchito a discussion about this very topic arose whilst waiting for the meeting to start, with one resident stating, with the agreement of others:

‘Home and house are not the same. Home is the family. The house is where you all live’ (Pedro, Panchito)

Mia, a young mother currently living in her family house in Wilmore stated:

‘For me, home means family, peace, love and above all else communication...’ (Mia Wilmore).

That residents seemed to equate the concept of home to the family, love and communication suggests that the home relates, not only to a specific location but also to a feeling, a way of being in the world (see Manzo 2003), the ‘usually unnoticed, taken-for-granted situation of being comfortable in, and

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9 It is important to recognise that gender-based domestic violence in the Dominican Republic is widespread. A handful of female participants implied that they had been subjected to domestic violence at some point in their lives and the suggestion was that these experiences had somewhat complicated these usually quite commonly held meanings of home.
familiar with, the everyday world in which one lives' (Seamon 1979: 70). It therefore should be transferable, to a certain extent, between housing structures. That said, they do often have the resultant impact of causing greater attachments to the house itself to the extent that some residents did find the distinction between house and home more complicated and struggled to separate them emotionally, for example as Sara expressed,

\[ \text{HS: When you think of home, where do you think of?} \]

\[ \text{Sara: Of my house, my house and my family. For me this is a home, my home. For me the home is part of the family (Sara, Panchito).} \]

Furthermore, when discussing her relationship to her house this same respondent, Sara, a teacher and long term resident of Panchito was brought to tears, stating that while it proudly represented many years of hard work, and happy memories relating to the construction and modification of the house and also raising her children, it also made her feel ‘melancholic’ because of the void she felt there now that two of her three children had moved out to start their own families. At this point in her life, nearing retirement and considering options for moving away from the community she stated that she would never actually be able to sell her house because of the meaning that it encapsulated and the sacrifice that it represented.

Using an evacuation context as an example, Clara suggested that the transfer of feelings of being at home from one structure to another is not so simple:

\[ \text{‘If you have to turn to a neighbour or to a family member it is not the same. Practically speaking, if you cohabit there, in that moment, that is your home, but at the same time you don’t feel as though this is your real home. You feel like you have a place but it is not yours because you don’t belong there, do you understand what I mean?’ (Clara, La Ciénaga).} \]
The research suggests that the attachments that residents did or did not feel to their home had consequences for the types of adaptation activities that they would carry out. This will be explored in the following section.

Place attachment, the house and adaptive capacity

Residents’ positive sense of attachment to their houses understandably results in and reflects their increased desire to remain living within it. This commitment is important for autonomous adaptation because it manifests as a desire and willingness to make more costly modifications to the structure over time. Even if these are not, as the last sections demonstrated, primarily driven by a desire to respond to climate risk, residents often take the local risks into account and factor them into building practices. This includes building raised cemented flooring and making the conversion from wooden to cement block – actions which reduce the impacts of weather events.

Where residents had lowered attachments caused by the low quality and degradation of the house, or where they were possibly undergoing a process of ‘detachment’ the desire to remain in it was lower. In such cases incentives to invest in it were reduced, particularly when they felt as though or hoped that relocation may be offered by the government at some point. That said, these residents did not remain completely passive to weather impacts and instead employed a range of low level coping strategies. As discussed in Chapter Two, rather than involving planned actions with a longer term focus, as adaptation implies, coping involves short term and immediate actions which are more reactive in nature. Participant observation and interviews revealed that such examples included sweeping water from the house, raising furniture and objects from the floor and covering mattresses and valued objects with plastic sheeting.

Being able to make modifications to the house particularly after the impact of a weather event was important for creating, maintaining or re-establishing the sense of security that it provided and therefore protecting elements of the intangible aspects of residents’ feelings of being ‘at home’. Participants who
had previously noted the feelings of comfort to be gained from their house
describe how the associated effects of disasters and severe weather convert
these feelings into nervousness and fear when the security usually afforded
by house was compromised by the event. For example Clara in La Ciénaga
stated:

‘I was in the house cooking for the children and a really strong wind
came and I thought it was going to blow the house down. The river
rose so high and there was a really strong current and a really strong
wind…I was on my own and I felt as if I was suffocating, I was scared, all
the water was entering the house and I was thinking about the
cobras and that one might bite me. The river was so high in here it
invaded the whole house.’ (Clara La Ciénaga)

Residents’ desire to protect themselves but also the intangible feelings of
being at home, particularly the feelings of security felt whilst in the home
environment, often saw them engaging in activities primarily aimed at
attempting to eradicate local risks. For example, Dana in Wilmore lived in a
house at the side of one of the community’s cañadas. Consequently it often
flooded during heavy rains. She described the sense of nervousness she and
her family used to feel whenever the water level rose and came into the
house, stating:

‘Whenever it rained I didn’t sleep thinking that the river was going to
rise and that we would have to get out’ (Dana, Wilmore).

In response to such fears Dana and her husband had raised the level of the
outside space which borders the cañada and built a wall to prevent it from
entering her house (see photos 24 and 25). These adaptive actions, when
successful, serve to create or restore the sense of security and calmness in
the home during rains.

_Dana:_ Look at the river, this used to rise up to here and this land here would slip away and then I’d have to rebuild it. I think it was about 13 trucks of materials to do this. Because all of this would go in the river and when the river rose, it would rise up to here (into house).

_HS:_ And does it work well now?
Dana: Yes but there are more than 60 bags of cement there…and look at this wall we built. It’s cement block but underneath is all concrete. All of this was in the river. The river always came in here…and now it doesn’t enter because it is high, this wall…I feel a lot better now.

HS: So life is better in this part now?

Dana: Yes because now you are not worried that the river is going to rise and that you will wake up down at the esplanade. But honestly the water would come right up to here in the house. but now since I built the wall it doesn’t come in. (Dana, Wilmore)

Photo 24: Cañada that flowed past Dana's house, Wilmore.

Photo 25: Raised flooring and a cement wall built by Dana, Wilmore.

Source: Holly Schofield.
This section has demonstrated the ways in which people’s attachments to their houses, shaped by their continued interactions and modifications with the structure itself and the desire to protect feelings of safety afforded by the house, interact with their capacities to confront weather events. The following section characterises and then explores the impact that the final dimension of the sense of place, place identity, has on adaptive capacity.

6.3 Place identity and the house.

The house plays a central role in individual and household identities. The financial, physical and emotional investment in the house provides people with a means of defining and projecting their own individual and family identities to others. In this section, making use of Breakwell’s (1992 in Twigger-Ross and Uzzell 1996) conceptualisation of place identity which allows for an exploration of the concept through factors such as distinctiveness, self-efficacy self-esteem and continuity of place, the key ways in which the house and place identity interact will be explored as well as the ways in which this identity is impacted by, and shapes responses to, disasters and severe weather associated with climate change.

Self-efficacy.

Self-Efficacy is a measure of personal agency. It refers to a person’s perception of their ability to be effective in achieving personal goals or carrying out everyday tasks. Self-efficacy therefore is said to be greatest when an individual believes that they possess the ability to do these things (Twigger-Ross and Uzzell 1996: 208). Exploring the self-efficacy principle of place identity in relation to the house involved examining the evaluation made by residents of their ability to construct or modify their houses to suit their individual or household’s needs, goals and demands, coupled with the resultant boost that the successful realisation of building and modification plans gave to a person’s sense of self-efficacy.

Given that self-help is the dominant mode of housing production in the Dominican Republic, self-efficacy is an important component an individual’s
ability to construct and modify their houses. In all communities, particularly in Wilmore and La Ciénaga but increasingly in Panchito, the fact that a great number of people, have managed to consolidate their houses over the years, starting with wooden shacks and moving more towards block walls and cemented flooring (with some even adding a second level), suggests that many residents possess a reasonable level of self-efficacy when it comes to building and consolidating houses. Determining if this was the case meant discussing with residents, subjects such as; how they had constructed or modified their house; what changes they thought they may make to it in the future and importantly how they were going to go about realising these changes.

Households with increased economic capacity in the communities were often able to bypass issues that impact self-efficacy in relation to housing construction and consolidation, such as financing work to be carried out and also obtaining construction know-how, by being able to pay for local contractors to carry out planned projects. Although this in itself required a certain degree of self-efficacy to seek out contacts and negotiate prices on materials and work to be done, not all households had access to such methods. All three communities possessed a number of residents who had modified their houses in this way and therefore cannot be considered in the same way as lower income households that strive to achieve modifications with more limited resources. One strategy deployed by lower income residents, in attempting to make some basic housing modifications, was to project a lowered sense of self-efficacy in which they emphasise their individual or households lack of income and subsequent inability to make basic and necessary changes. This is often envisaged as a means of enabling their access to paternalistic systems of governance that can facilitate clientelistic exchange relationships and the transfer of material support from the state to the residents themselves.

Dominican politics have traditionally been characterised by a culture of paternalism with Dominican people defining a good political leader in terms of a benevolent father figure to whom they can go, or rely upon, to resolve their
problems and look to for support (Duarte, Brea and Holguin 1998 in Pelling 2003). Paternalistic systems, like those found in the Dominican Republic, are fostered by clientelistic relationships which tend to legitimise the centralization of government which in turn reinforces, supports and normalises a culture of clientelism, considered ‘endemic’ in the Dominican Republic (Matias 1997 in Pelling 2003: 140).

Despite taking some steps towards a more decentralised and democratic institutional structure (see Pelling 2003) interviews suggested that vestiges of the traditions of paternalism and clientelism are still apparent and operating between individuals, communities and different political actors. Residents often talked affectionately of governmental leaders, framing their actions as manifestations of their personal character rather than their party’s policies. For example, in a discussion with Carolina about the ways in which La Ciénaga had changed in the years that she had lived there she spoke fondly of previous presidents because of the ways that they have provided materials to the urban poor to build houses with:

‘[Balaguer’s] government was more socially minded towards poor people. He gave us more jobs. He gave people materials to start building their houses better. There were more jobs for people. Leonel was good too. He gave a lot of jobs to people. This government is good too. Danilo, he’s really good. He’s built a lot of houses for people and given them jobs. There is the ‘Tarjeta Solidaridad’, more schools; he’s built more streets that we needed. He’s cemented it so now we are a lot cleaner.’ (Carolina, La Ciénaga)

Whilst, in Samaná the signs of a more decentralised political and institutional system are visible the typically centralised paternalistic and clientelistic relationships have also been transferred to the local level. Residents expressed the fact that they would look to the state senator to discuss issues and problems and a number of low-income families stated that they had turned to him to request materials to make modifications to their houses.
For example, Alejandra, in Panchito, who has received municipal support to modify her house in the past, explained how low income residents could go about the process:

\textbf{Alejandra:} I intend to fix the house up, I’d like to put a real roof on the house and then build a second floor for the church – I’d put the church on top. This is what I’d like to do. Well, if I find money.

\textbf{HS:} From a loan?

\textbf{Alejandra:} No, for a loan you need to be working, like have a business so that you are able to pay it back but I don’t have a business and neither does my husband anymore. Now he is not working. Well, he does odd jobs and things, but he doesn’t have a fixed job. You need that, or a business that pays you monthly. So I can only build if someone gives me some help, you get me? Friends or the government if it is possible, if you ask the politicians they’ll give you something. You see this tin (roof) the politicians gave it to me. At first when I began to build, the politicians gave it to me. We asked them for help, filled out a card, like a request form for the church and they give you materials like what I have here. So all of this part (roof) was from the politicians. I only had this part (points to the house) and I wanted to put this bit here and they gave me this tin and wood. So I put this part out here.

\textbf{HS:} How long ago was that?

\textbf{Alejandra:} About 4 years ago.

\textbf{HS:} So how do you get the politicians to give you the materials?

\textbf{Alejandra:} You can write a request, or you can go in personally to their offices and say ‘look, I have these needs’ and they give you it. They don’t do it all of the time but every once in a while they will give it to people. So now I’m going to build up this part here. Well I’m going to fill in a request form and then see if they will send me some help. You see? And like that you construct. (Alejandra, Panchito)

Indeed a number of the low-income individuals and families that I interviewed had originally received materials to construct or modify their houses from the state senator in the run up to political elections or after having lost the previous structure to a hurricane’s impact. At other times the senator would
arrive in the communities with a team to distribute aid to people deemed in need on an implied *quid-pro-quo* basis. I saw a number of these clientelistic interactions take place while spending time in the communities.

For example, one Friday towards the end of June residents in Panchito, invited me to a meeting that was taking place at the community centre between the community and the state senator. They were particularly excited by his arrival because they had heard that he would be announcing that some residents would be receiving materials to fix their houses. In a very animated speech, with his own camera crew present, the senator was continuously met with cheering and applause as he presented the president of the community group with a new watch, promised to provide materials to finish construction of the community centre building and to furnish it with a flat screen TV as well as cooking facilities for community use. He then announced the four households, considered to be in greatest need, who would be recipients of the materials to improve their houses. Finally, before leaving, he and his team handed out food parcels to those present. After the senator had left the community and people were starting to disperse, I heard one of the older community leaders offering advice to one of the younger chosen recipients of materials stating, ‘*after they have fixed your house you need to tell them to get you a job*’. This event and exchange somewhat exemplifies the patron – client style relationship that characterises Dominican politics and society still to this day.
Because of this system, residents often had a certain level of interest in promoting a negative image of their house to outside sources and in emphasising how poor they were as a household as it ultimately may help them to gain access to materials necessary to improve it. Angela, who earlier was shown to have lived eighteen years in a riverside shack in La Ciénaga and had made no amendments to it, had the ultimate goal of being relocated to a nicer house out of the community. Similarly, in San Pedro de Macorís when carrying out community interviews and surveys with TECHO, once word had spread around the community that we were there and entering people’s houses, residents from different parts of the community came to approach us, pleading that we look at their houses and keen to show us their needs. The longer term goal however as interviews revealed was often the opposite. Residents actually placed great emphasis on improving their houses so as not to appear to be so poor, particularly among other community residents. The role of housing consolidation in modifying projected self-conceptions will be discussed later in the chapter. The following section will discuss the implications of the type of self-efficacy described here in relation to housing shaped residents’ adaptive capacities.
Self-efficacy and adaptive capacity

Housing quality interacts with self-efficacy in relation to people’s perceived abilities to cope with disaster and severe weather events. Higher quality houses often (although not always) meant that the residents no longer needed to evacuate, or make plans to evacuate their properties during heavy rains or when hurricane warnings were given. They therefore often felt more confident in their ability to face such events. The same cannot be said for people living in less consolidated and structurally more vulnerable houses however, whose only option in the face of such events was to evacuate, therefore challenging the notions of security that residents often associated with and valued about their houses.

When self-efficacy was threatened in such a large way by the threat of disaster or the impacts of severe weather, residents tended to turn to religion as a way of making sense of the situation. Residents almost always expressed the idea that while large events are acts of nature their impacts are decided by God. Because impacts are viewed in this way, on the surface people tend to adopt a relatively fatalistic stance and appear to hand over all control of the situation to God in similar ways as discussed in other contexts in Chapter Two. As Matias from Panchito demonstrated:

‘We have to live with what happens when a storm comes. Storms are nobody’s fault because only God knows what he is doing. When a storm comes you have to leave it to him because, what else can you do?’ (Matias Panchito).

Similarly in response to a question about how she stops the water from entering her house during heavy rains, Carolina stated:

Carolina: Nothing. I can’t do anything. It comes in whatever I do. But if that is God’s will and I can’t stop it I won’t be able to stop it. (Carolina, La Ciénaga)
It may be true to say that in parts of La Ciénaga or for those living with extreme exposure, when disasters threaten or during very heavy rain, when vast quantities of water are entering the house, the type of low-level coping actions available to these groups at those moments, such as sweeping water out for example, are probably futile. However, despite these relatively fatalistic attitudes towards, and obvious threats to self-efficacy, observations and interviews showed that residents did not remain inactive. Rather, they still tended to undertake a range of low level coping strategies to protect their homes and outside spaces the best that they could before evacuation if that was ultimately deemed necessary. Such actions typically tended to involve the securing of roofing and water sources, tying plastic sheeting to internal walls to try and minimise water ingress, placing plastic sheeting over beds or moving mattresses away from places prone to leaking, and placing important items and clothing inside plastic bags to prevent them from getting wet. In La Ciénaga, it was also clear that in some places particularly in the area where Carolina lives; residents had made attempts to reduce the quantity of river water from entering the houses by building and maintaining barricades along the water’s edge (see photo 27) and building modest drainage channels.

**Photo 27: Residents' self-made barricade, La Ciénaga.**

![Resident's self-made barricade, La Ciénaga.](image)

Source: Holly Schofield.

Rather, it could be that the seemingly fatalistic stance that residents adopt is also in itself a coping mechanism, similar to that found by Shmuck (2000) in
Bangladesh, to help residents make sense of and accept events but also return to normal life as quickly as possible. Indeed this sentiment of dealing with the event rapidly and not dwelling on its impact was certainly present in residents' responses to dealing with flooding, particularly in La Ciénaga. As Manuela indicated:

\[\text{HS: } \text{And if water is entering your house, how do you feel?}\]
\[\text{Manuela: Well I feel a little nervous but it comes and goes. You see this water here, it was over there, but look. It's going back. So when it goes back you clean and no problem.} \]
(Manuela. La Ciénaga)

As mentioned earlier this projected lowered self-efficacy also served a purpose for the poorer residents that struggle to make larger scale improvements to houses by facilitating their access to clientelistic exchanges with governmental officials. Residents' use of paternalistic systems can support adaptation among those that are successful in accessing them because often the materials obtained help them to better face the impacts of severe weather and disasters. For example Alejandra in Panchito who had successfully managed to obtain several sheets of tin had used these as a means of covering the space outside her house which she could now use to deliver sermons (See Photo 28). This also provided her and her family with a shaded outside space in which to escape the heat on particularly hot days as well as providing a larger space to carry out tasks such as preparing food that she would have otherwise done in her small kitchen. It also provided the area with greater protection from heavy rains.
Residents were often hopeful that they would be recognised as being in need of assistance but also realistically accepted that it does not always happen with the chances increasing during elections or in the aftermath of severe weather events. This highlights the uncertain nature of this strategy in terms of its potential for impacting on people’s adaptive capacities (as well as the urban poor’s vulnerability to political manipulation). Within this context of limited alternative options residents remain patient, simply waiting to be noticed or for an opportunity to be able to demonstrate to municipal or outside sources, their need for support. As Paula, a long term resident of Panchito living in a very low quality house in Panchito explained:

HS: Have you modified [your house] at all?
Paula: No I haven’t changed it. It’s exactly as it was [when we bought it]. The only thing that has changed is the floor because before it was all earth [now wood].

HS: Do you have plans to do anything else?
Paula: Well, I have plans but when you have few resources you have to wait for someone else to help you to get started

HS: Where will this help come from?
Paula: The government hopefully…I hope the government remembers us and changes our situation.

HS: What type of help is necessary?
Paula: Well, help with the home. We always find food, we always find help but we have few resources to do a house and that is what I want most. (Paula, Panchito)

Similarly, Isabella, another resident of Panchito, lived in a low quality house in the higher part of the community. The house was in disrepair, and large holes in rotting wood ensured that the rain soaked everything inside every time there was a shower. On several occasions I was at her house during a downpour and we had to quickly lift the mattresses in the bedrooms to place them against the walls to minimise the amount of water that could get to them (see photo 30).

Photo 29: Outside of Isabella's house, Panchito.

Source: Holly Schofield.

Photo 30: Inside in Isabella's house, Panchito.

Source: Holly Schofield.
As the mother, and neighbour of one of the residents who was chosen by the senator to receive housing materials, Isabella was convinced that at some point, given her close proximity to them and similar living conditions, that she too would be donated materials to fix her house. In the meantime Isabella who worked fulltime as a cleaner in the public hospital in Samaná, received support via the ‘Tarjeta Solidaridad’ for gas and electric, who often sublet her spare bedroom to make extra income had no plans to invest her own limited income into making such modifications.

Additionally Isabella’s main goal was not to respond to the impacts of severe weather. Instead she was hoping that once the quality of her house had been improved she would have a better chance of selling it and moving to La Romana, a city on the south coast of the country where other family members lived. Following a bout of sickness, she had been forced to reconsider her sense of place and felt as though the relatives in La Romana would better care for her in her old age or should she fall ill again. Whether this was ultimately a pipe dream of Isabella’s or an actual plan was not certain, however the example highlights how residents often projected a lowered self-efficacy to obtain materials, and in the meantime exercise patience, a strategy in itself to a certain extent, but one which does not necessarily always lead to meaningful adaptation.

Continuity
The continuity principle of place identity assumes that the desire to preserve and maintain the continuity of the self-concept is a key driver of action (Twigger-Ross and Uzzell 1996). Within this conceptualisation, two non-mutually exclusive types of person-place relationship exist; place-referent and place-congruent continuity both will be discussed here.

Place-referent continuity refers to the manner in which places and belongings act as referents to past-selves and actions. It is suggested that maintaining a link with a given place, allows it to act as a type of background against which people are able to compare themselves at different moments and stages in
their lives. In this way the place provides them with continuity and coherence in their self-conception (Korpella 1989, Twigger-Ross and Uzzell 1996). Relocation has been described as representing self-concept change. When a person chooses to relocate it is suggested that the new site can be used as an opportunity to reflect new identities however the old place retains its relevance as a reminder of the old-self and what that represented (Hormuth 1990). Many of the residents suggested that some of their more momentous occasions and greatest achievements while living in the community (other than raising children) took place when they were able to make modifications to their houses, especially larger changes that significantly improved their living conditions. The laying of concrete floors and the development of homes from wooden shacks to block houses often acted as significant markers or turning points in people’s lives and self-images.

Whereas place-referent continuity refers to the maintenance of links with places that hold emotional significance, place-congruent continuity refers to the maintenance of links with places that are congruent with a person’s identity as a certain type of person. People may choose to live in places that they feel are congruent with their identity, or they may modify the physical environment as a means of expressing and projecting their own identities (Duncan 1973 in Twigger-Ross and Uzzell 1996).

Residents often placed great importance on personal and housing appearances and expressed the sentiment that it represented an extension of them as a person. Many residents made a lot of effort to not look poor in the eyes of other people in the community and in relation to people in the wider city. This manifested in terms of the importance that residents placed on personal appearance and ensuring that clothes and shoes remained free from mud (a commonly perceived indicator of poverty among community members) as will be discussed in greater detail in Chapter Seven. It also manifested through the house and meant that residents sought to keep the house clean and consolidate it to the highest level possible. Often they desired and celebrated the upgrading of their houses as much for making them look less-
poor, as for the lifestyle benefits that accompanied it, as suggested here by Carolina:

‘I feel a lot happier now that I have a floor I didn’t have one before and it was all just mud and water. I was really sad when I didn’t have a floor because you look really poor and really quite helpless when you don’t have one’ (Carolina La Ciénaga)

Similarly, Angela, living with regular flooding in La Ciénaga listed appearances as a central reason for why she would like to have a cement floor and more objects to adorn the house:

HS: Do you have any plans to change anything about your house?
Angela: If God helped me I’d buy and lay the floor on the house. If God helps.
HS: That is what you want to do?
Angela: Yes, raise it more and lay a floor, and maybe replace the wood and tin… I’d ask God for a floor and buy some things so that if anyone comes to the house it looks cleaner. (Angela, La Ciénaga)

The research indicated that disasters and severe weather threatened aspects of the continuity dimension of place identity, but that a desire to maintain a degree of continuity in the self-concept also played a role in residents’ motives to carry out adaptation. These notions will be discussed in greater detail in the following section.

Continuity and adaptive capacity.
Disasters represent a threat to the continuity of place principle because of their ability to raze houses to the ground. This removes, with one blow, the backdrop in terms of the structure, but also the range of possessions, objects and artefacts contained within the house that provide people with comfort and allow them to compare themselves at certain points in their lives. Residents in La Ciénaga discussed the feelings of emptiness that they felt, returning to the
site of their home after hurricane Noel in 2007, to find it completely destroyed or looted and to the realisation that all the progress they had made was wiped out and they had to start to rebuild it all over again. The desire to protect the contents of the house meant that in evacuation contexts residents made judgement calls about if and when they should leave the area often placing personal safety at risk to protect the house and assets contained within it. This sentiment was expressed by riverside resident Manuela:

Manuela: Sometimes you are scared when you live in the river and they say that it is the hurricane season, then in your mind you are imagining how to protect what you have, how you are going to stop your things from getting damaged and what you are going to do. Then I think, well, I’m going to send my children there and I’m going to stay here. You think like this when it rains too, it’s not easy.

HS: So usually you will try to stay?

Manuela: Yes because it is usually in these times that people will come to your house and steal everything…so I say ok, I’m going to wait and see. If I see that the river is up to this point its ok but when it gets to this point I go and look for somewhere to go because by then it is already starting to block the way out. (Manuela, La Ciénaga)

Rather than completely eradicating the continuity provided by a place, the more incremental severe weather impacts, such as flooding and rain, tend to cause the gradual but constant erosion of low-quality houses, such as rotting wooden walls and eroding tin roofs. Carolina in La Ciénaga explained:

‘With the weather having damaged parts [of the house] I have had to replace the iron and the wood. Under the house is just water so it rots the wood. Two years ago I had to replace all of this at the bottom because the river eats away at the posts and the house starts to collapse…Wooden houses, like mine, damage. But if it is made from cement you don’t have to rebuild it. If you have a house made of wood and tin then you are always having to fix it and you are always paying for something a repair or something’ (Carolina La Ciénaga).

Her sentiments were echoed by Lila in Panchito who stated:

‘I don’t want to rebuild this house from wood because it lasts no more than two or three years and then by then it is rotten because of the
rain. This wood was given to us by the government but because it is rotten I've had to reinforce it with tin. When the rain comes with the wind it wets the wood and rots it. The wood behind it is useless now really.’ (Lila, Panchito)

Carolina and Lila suggest that residents often make attempts to maintain their houses by making modest adjustments to bring them back to a similar standard but over a period of time, The problem with such constant and piecemeal repairs however, is that they serve to deplete and divert funds that could have, at a later date, been used to make longer lasting improvements that support people in projecting their identities whilst increasing their resilience to the impact of severe weather. In Panchito, Gabriella and her family, whose house was in dangerous disrepair, perched precariously on the hillside and starting to crack down the middle, had identified and cleared a space set back from the hill where they were hoping to gradually start building a new concrete block house. They were in the process of accumulating materials to be able to start construction (See Photo 31).

Photo 31: Gabriella standing on land cleared to build the new house, Panchito.

Source: Holly Schofield.

Gabriella acknowledged that the rains were eroding the hillside and making the house dangerously unstable. However, they were not yet financially able to start building the new cement block house. They are now stuck in a position in which they need to decide between diverting any little extra savings that
they can draw together into attempts to stabilise the current house and attempts to accumulate materials to start building the new house. Both Gabriella and her husband, expressed frustration that this was another barrier (in addition to the lack of access to this part of the community) preventing them from making the transition to living in a cement block house. They were both openly ashamed of their current housing because of its low quality, stating that they thought friends from outside the community often imagined that they ‘lived better’ than they do. Their drive to convert to a cement block house was, in part motivated by a desire to live up to this image. Indeed Gabriella talked excitedly of being able to invite her friends from the college where she pursuing her high school education (having not gone to school in her youth), to the new house once it was constructed. Despite the current house becoming increasingly unstable, Gabriella and her husband were still prioritising the construction of the new house.

Unwanted and uncontrollable changes in the physical setting, which result in the disruption of the principle of continuity, have been shown to negatively impact on general well-being, leading to feelings of grief and loss (Fried 1963, Cunsolo-Willox et al. 2012). While lowered determinants of well-being, such as self-esteem have been linked to a potential reduction in adaptive capacities (Fresque-Baxter and Armitage 2012). This relationship will be the subject of the following section.

Self-esteem.

Place identity theory suggests that a given environment can provide people with increased feelings of self-worth, or self-esteem (Korpella 1989, Twigger-Ross and Uzzell 1996). Interviews in all three of the communities supported this assertion. The physical interaction of the person with the house through consolidation or through decoration (discussed in greater detail later in the chapter), which allows residents to express and project their identities, was considered a substantial source of pride and happiness for residents. Joanna in Wilmore describes the work that she and her husband carried out on their family home when they first bought it:
‘[This house] was good for nothing. We had to buy all of the materials for the walls and the roof it was horrible, horrible, horrible! The inside was all open plan and we closed the kitchen off. This bit was the kitchen but we closed it off from here to make a bedroom for the children…this house was horrible! Now I feel better here because when I arrived, I was like ‘oh no, I cannot live here’ but since the house has been done I feel happier. We didn’t have a house before and when we go this one it was in a bad condition, afterwards we fixed it up and it looks a lot better. If you ask people how this house was they say this house has seen a change! I’m proud of it’

(Joanna Wilmore)

Alejandra in Panchito made a similar point:

‘Look at that lovely house. Many people would say that this house is more important than mine. But for me it is not because they may have their nice house but I’m here and I’m happy because this is what I have. A person who sees that they have this nice house might feel bad when they see my house but not me…I feel proud because this is what up to now I have been able to have. Perhaps tomorrow I can have something better…There are women that go to your house and they see that you have lovely furniture and say ‘I want to buy furniture like this!’ But not me. I will buy my furniture when I can. I’m not going to feel shame or torment myself because the neighbour has nice furniture. I’m going to have mine as and when I can. So she has her nice house, well-furnished house, they have everything in there, even a Jacuzzi. But I have a little bathroom here where I can wash and I feel good because that’s what I have. So for me no place is more important…There are people here that are like, ‘no, I’m not going to bring my friend here because look how I live’ and they feel ashamed but I don’t feel ashamed because this is what I have built.’ (Alejandra Panchito).

Although residents, like Alejandra, with very modest houses, often expressed pride at what they had achieved up until that point in their lives, there was still often the suggestion as in Alejandra’s quote that many residents in low quality houses felt a sense of shame and felt judged by others. Julieta in Wilmore had constructed a wooden and tin shack when she had originally moved into the community. Although she had managed to consolidate it to a high standard over the years, she noted that that she had been embarrassed of her house before managing to do so:
‘I did not used to want people to know where I lived before this house was in a really bad condition’ (Julieta Wilmore)

Similarly Gabriella in Panchito expressed in relation to her current low quality house:

‘I feel like I’m judged on where and how I live. If your house is in a bad way you feel ashamed to bring people to it – especially when that person might have thought that you live better.’ (Gabriella Panchito)

Some sense of place literature suggests that lowered place related self-esteem may decrease an individual’s perception of their ability to confront change (e.g. Fresque-Baxter Armitage 2012) by creating a type of avoidance of the situation. Despite such predictions however this did not seem to apply in the urban poor context. The following section will discuss this further.

Self-esteem and adaptive capacity

Contrary to assertions that lowered place-related self-esteem may reduce capacities to adapt (Fresque-Baxter and Armitage 2012), residents suggested that lowered self-esteem and the desire to enhance it was actually a key motivator of housing consolidation which can have positive impacts on people’s capacity to withstand weather impacts.

For example, when I first interviewed Matias, a long term resident of Panchito, the interview took place in the centre of Samaná close to his place of work and not at his house where I would normally carry them out. Several times throughout the interview when discussing his house, Matias lowered his voice quite significantly even though there was nobody else around. Even at this point before ever having visited it I had picked up on his sense of shame relating to its low quality although he did also refer it as being in a ‘bad state’. As a resident of one of the higher parts of the community, he in part equated the low quality of his house to the lack of access afforded that area. Unable to enter by car, the costs of construction are greater for hilltop residents who
have to pay additional labour and transport costs, than for those living by the roadside.

Matias was an active member of the community and over the time that I was there he was using much of his time outside of work with some other residents to try and build a joining road that would allow cars to enter that part of the community (see Photo 33). When discussing his desire to improve access, he explained that his primary motivations for doing so were based on his desire to modify his house and start transitioning from wood to block. Although little by little he felt as though he could start to accumulate the materials, without access to the area in which they lived, he would need to pay labourers to transport materials on horseback to his home thereby increasing the costs of construction. Without the increased access his salary would not be sufficient to meet his family’s needs and modify the house.

**Photo 32: Path leading to Matias’ house among the trees on the left, Panchito.**

Source: Holly Schofield.
Photo 33: Path in Panchito that Matias wants to widen so cars can enter.

Source: Matias, Panchito.

In relation to Photo 33 Matias stated:

Matias: On this one I wanted to show you the condition of the paths back there. This is the one we hope to improve. The only place vehicles could enter is there but we do not have the resources to shovel the area...if this is fixed and a vehicle could enter it would change a lot you know...everyone here wants to build with concrete but has to pay others to bring up the materials. So for this the materials double in price...it works out really expensive so this road is really important to us. (Matias Panchito)

This transition to block provides residents with a boost to their self-esteem and seems as much as a motivation for making the change as a desire to obtain greater protection from weather events. Especially in a context where neighbours already possess consolidated houses. Matias reinforced this type of attitude when discussing housing types in the community in relation to Photo 34:

‘It would look horrible to have a wooden house next to all of these nice houses made from block with two levels. These people feel in competition with those living next to them...even if they wanted to build with wood, shame does not let them’ (Matias Panchito).
Photo 34: Photo of consolidated housing in Panchito.

Source: Matias, Panchito.

Photo 35: Roadside houses in Panchito.

Source: Holly Schofield.

Many of the options open to residents to boost their sense of self-esteem through their houses are dependent on the household’s economic capacity. In some cases, despite the focus here on the physical structure of the house, many of the modifications that people undertake to enhance place identities and self-esteem are aesthetic and aimed at making the house unique and distinctive. This will be discussed in greater detail in the following section.
Distinctiveness.

Distinctions. Twigger-Ross and Uzzell (1996) state that perhaps the most fundamental principle of identity is the desire to maintain personal uniqueness or distinctiveness. The literature as it relates to place and distinctiveness suggests that being from or living in a specific place can create ‘distinct identity’ which is used by individuals as a means of distinguishing themselves from other individuals or groups (Fresque-Baxter and Armitage 2012: 254). For example at the settlement level, research on identity and distinctiveness has focused on the perceived uniqueness of being a town or country ‘type’ of person and the specific lifestyle that this may encapsulate. Narrowing the focus, it has been demonstrated that association with a specific area of a town allows people to differentiate themselves from other people living in different parts of the town (Lalli 1992). This is an aspect that will be discussed in greater detail in the following chapter which focuses on the community. It follows therefore that within the settlement, houses and the artefacts contained within them can be used to create a unique household identity, both shape and reflect people’s understandings of who they are as individuals and be valued for those purposes (Brown and Perkins 1992).

Indeed the varied styles of housing in the communities reflect this idea with residents participation in the building and modification of the structure often meaning, that while there are often spatial, economic and legal restrictions, houses no matter how modest, are personalised inside and out to appear unique and reflect individual tastes and preferences. Photography participant Isabella highlighted the different ways in which people with more consolidated houses build and personalise them as a positive feature in the community (see Photos 36 and 37).
The inside of the house is of equal importance in terms of self-definition and creating a sense of place identity as the outside appearance, often more-so for poorer residents whose tin or wooden or unfinished block houses are more difficult to embellish. The same was also true for renters whose investment in the structure of the house was usually kept to a minimum. Brightly coloured curtains decorate walls and doorways, while religious artefacts and photos decorate wall space and various ornaments adorn surfaces. In this way, the interior of the house reflects personal taste, relationships, achievements, values and pleasures that are crucial to individual and family identities and definitions. The outdoor culture in the communities and somewhat open door policy that exists (at least during the day) means that residents are able to project the interior of their house out to their friends and neighbours in a similar way to which they do with the exterior.
Photo 38: Outside of Sofia’s house La Ciénaga.

Source: Holly Schofield.

Photo 39: Inside of Sofia’s house, La Ciénaga.

Source: Holly Schofield.

Photo 40: Outside of Joanna’s house, Wilmore.

Source: Holly Schofield.
Residents suggested that décor and artefacts can help create or contribute to feelings of homeliness even in environments which at first glance do not seem to support such emotions. As Emily the resident in Wilmore shown earlier to have little attachment to her house explained,

‘The house was downstairs but there is nothing there now. My mother and grandmother all lived downstairs. Up here there were just two rooms and a balcony but when I came in 1981 to stay here we put a little kitchen up here. I feel content and comfortable in this house now that I have all of my little ornaments to put on my shelves and things’. (Emily, Wilmore).

This contrasts significantly with the impression I was given of low-income communities, particularly at the riverside of La Ciénaga prior to my first ever visit. For example one disaster risk management specialist described these residents as being unable to create this sense of home because they were essentially ‘living with one foot out of the door’, referring to their need to evacuate every time it rains. He further stated that these residents often have little more than a mattress inside of the home on the basis that anything else is likely to be stolen by looters should the residents need to evacuate (Interview Rennola 09.05.2014). This research found to the contrary, people, even in these locations have made the effort and investment to create the sense of home inside the physical structure. Although residents were
concerned about people looting their possessions at times of evacuation, this was certainly not sufficient to deter them from expressing identities through objects and décor inside their houses. Sometimes, as will now be discussed, residents actually prioritised these investments over others which may serve to increase household capacities to respond to severe weather and disasters.

Distinctiveness and adaptive capacity.
Exploring the importance that residents place on distinctiveness helped to reveal important information relating to people’s place related values and priorities and where they placed actions that support these in relation to others that may potentially reduce impact of weather events. For example Joanna, living with her family by the cañada in Wilmore spoke comprehensively about how the impacts of the cañada during flooding were very problematic for her and the family. She complained that during heavy rain it flooded the house but even when water did not make it through the door the inside of the house was always getting dirty due to the children coming in and out repeatedly. She often told me about how she needed and planned to build some kind of small wall outside her house that would prevent the water channelled by the cañada from entering it during rainfall. Even with the threat of eviction she accepted that this was something that still needed to be done because the impacts from it were so great. She said that it was a lack of finances that was delaying the building of the wall and stated that she and her husband planned to go to the Junta de Vecinos to request support in attempting to obtain the necessary resources from the municipal government.
I called in to see Joanna and her family almost weekly during the months of carrying out my research in Wilmore and throughout this time she had not made any progress towards obtaining the materials or constructing the wall in order to reduce future impacts from flooding. Despite repeatedly telling me that the wall outside the house was a priority for her, in carrying out participant observation I was able to see other values that she held and where she placed them in terms of her priorities for modifying the house. As she gradually adorned the living space with little ornaments and school graduation photos of the children I saw the house slowly changing from the concrete shell that it was when I first arrived (see Photo 43), to a house that represented Joanna’s tastes and family achievements and memories (see Photo 41). On my last day in the community as I called in on Joanna she was excited to show me the changes that she had made inside the house since my last visit. As we entered, it could be seen that she had decorated, with brightly coloured green paint, all the interior walls of the house. When I returned again in December 2015, Joanna had still not taken steps to build the wall and the situation, she explained, was now even more serious because the flowing water from the cañada was eroding the earth either side of it and destabilising a very large tree that leaned over the top of her house. That said, she had redecorated the entire interior and painted the exterior of her house (though only the part which was visible to passers-by), which she took great pride in
showing me and explaining how she had carried out all the work on her own (see Photo 44).

**Photo 43: Outside of Joanna’s house, Wilmore December 2014.**

![Photo 33: Outside of Joanna’s house, Wilmore December 2014.](image)

Source: Holly Schofield.

**Photo 44: Outside of Joanna’s house, Wilmore December 2015.**

![Photo 34: Outside of Joanna’s house, Wilmore December 2015.](image)

Source: Holly Schofield.

Although the expenditure associated with making such cosmetic transformations as painting the house are perhaps less than those associated with constructing the wall to block off the cañada, overtime such costs to accumulate and could actually exceed those associated with the wall. Overall the example shows how the value placed on making a house distinctive can
outweigh that which is placed on adapting the environment to reduce exposure to weather events.

6.4 Conclusion.

This chapter has explored the three dimensions of the sense of place as it relates to the house from the perspectives of residents in the three case study communities. It has sought to characterise the urban poor sense of place in relation to their houses but also understand if and how this impacts upon the capacities and strategies of urban poor residents to respond to disasters and severe weather associated with climate change.

The chapter has shown that place dependence, characterised by the desire for homeownership, means that residents will be more likely to make a positive evaluation of a place if it allows them to build or own a home there regardless of the existing environmental risks evident in those locales. Desires to consolidate the house in line with household needs and desires also formed a central element of urban poor place dependence. The actions that people take to do so were not always motivated by climate stresses but could have the resultant impact of increasing adaptive capacities to them.

Once housing or land has been acquired attachments to it can be formed and strengthened over time by the range of interactions that take place there which serve to increase place meaning. These can be physical interactions with the housing structure, such as modifications, or emotional interactions between members of the households and the accumulation of memories and life experiences there. Positive attachments to the house and a desire to protect the intangible feelings that it should represent, convert into a commitment to place and are necessary to motivate residents who are able to make the more costly amendments to the structure that support adaptation.

The house becomes incorporated into a person's overall self-identity structure. It provides continuity of identity and is used strategically to project various self-images to different parties depending on the desired outcome. On
the surface, houses appeared to influence self-esteem and residents assessments of their abilities to cope with weather events. However, even where self-esteem was lowered and where those assessments were negative, residents remained active in their endeavours to respond to them, driven by a desire to present a different self-image more in line with their perceptions of those around them. Particularly low income residents often attempted to use paternalistic systems of governance to their advantage by emphasising the vulnerability of their houses as a means of projecting an identity that is more likely to help them obtain access materials. Even if the end result was to dispel that same image.

In terms of pro-active adaptation, the drive residents possessed to present a certain image within the community through the house, and keep up with the developments of the neighbours, was actually at times a stronger motivator for climate action than was the need or desire to respond to climate impacts. These actions were, at times, complimentary to one another however not universally. The following chapter turns the focus to the second unit of analysis which is the community to explore how relationships with and within the community interact with capacities to adapt to severe weather and disasters associate with climate change.
Chapter Seven: The Community: Resistance and Relationships as Sources of Adaptive Capacity.

Introduction.
The purpose of this chapter is to characterise residents' sense of place in relation to their respective communities and understand what role this plays in their capacities and strategies to adapt to disasters and severe weather associated with climate change.

The chapter starts by looking into how residents understand their community identity and the factors that shape it. The chapter makes use of the same place identity concept which guided the discussion in Chapter Six (Twigger-Ross and Uzzell 1996). The analysis suggests that two main themes cut across each of the place identity dimensions of the concept when explored in relation to the community. To avoid repetition when discussing the implications of place identity for adaptation these two themes are identified and their implications for the adaptive capacities and strategies are examined, rather than discussing the implications for adaptation related to each individual dimension of place identity as Chapter Six did. The two themes relate to; understandings of the aesthetic features of the built environment and to perceptions of the residents by resident and non-resident actors.

Section two turns the focus to community dependence and attachment. It explores the importance of community location to place dependence and then the range of familial, fictive kinship and neighbourly relationships present within a community that mean that it meets a person's needs and expectations and which mean that it is valued for those reasons. Section two also examines which of these relationships are drawn upon to support responses to climate events and the type of strategies that result from them. The chapter concludes by drawing together the main findings of the preceding discussion.
7.1 Place identity and the community

As seen in Chapter Two, place identity focuses on the relationship between the self and place highlighting the ways in which certain places can act as a ‘locus of the self’ (Hummon 1992: 252). In Chapter Six, residents’ place identity was characterised in relation to the house using a conceptualisation of place identity which allows for an exploration of the phenomenon through notions of distinctiveness, self-efficacy, self-esteem and continuity (Twigger-Ross and Uzzell 1992). In doing so it highlighted the importance of place identity as a means for better understanding low-income residents’ values and priorities in relation to their houses and suggests that the concept provides a means of exploring how weather impacts are felt and interpreted as well as the actions that low-income residents take or do not take to protect themselves from the impacts of disasters and severe weather. Remaining with this same conceptualisation of place identity, this section, will examine the phenomenon in relation to the community and how this shapes and impacts the adaptation strategies adopted by residents.

Distinctiveness

As discussed in Chapter Two, the principle of distinctiveness, which is central to the concept of place identity, refers to the ways in which individuals and groups distinguish their identity from that of others. The identity of a given location or group of people is not assigned objectively, instead, as stated by Lalli (1992) it is something which is perceived by individuals or by groups and the outcome of individual or social constructions or attributions.

Lalli (1992: 293) goes on to state that the ‘self-enhancement of residents is an important function of such identity constructions.’ The interviews and discussions held with residents within all three communities certainly suggested that they often engaged in a process of differentiation of the various social and, in some cases, aesthetic dynamics of their own community in contrast to that of others located within the same town. Whilst at times residents may highlight the positive aspects of their own communities as part
of this dialogue, the reverse can also be true and in some instances residents differentiated themselves on negative terms and in doing so contributed to the reproduction of negative self-definitions.

In Panchito it was felt that the community held and reflected a positive identity. Residents interviewed in different parts of the barrio emphasised and indeed celebrated its ‘peaceful’, ‘quiet’ and ‘secure’ nature, particularly in relation to other parts of Samaná. Almost every single resident of Panchito interviewed described the community and its residents as ‘tranquilo’ meaning calm and quiet. This calm identity was often seen to be intertwined with the physical qualities of the community and valued for that reason. To understand what Panchito residents felt was distinctive about their community, one question that I frequently asked was, ‘is there any difference between Barrio Panchito and other communities in Samaná, such as Wilmore for example?’ In Wilmore the reverse version of the same question was usually asked. Residents in Panchito, especially those away from the main road, appreciated Panchito for its beauty and the serenity offered by a higher percentage of vegetation cover and the views over the bay (see photos 45 and 46).

**Photo 45: Positive aspects of community I.**

![Positive aspects of community I.](source: Matias, Panchito.)
Residents additionally expressed the idea that the tranquil setting of the community both reflected and was reflected in the relaxed and calm identities of the residents. Conversely, they often equated what they envisaged to be the insecurity and chaos present in Wilmore to the very high density of housing and the chaotic nature of the construction that has taken place there. When discussing Panchito and Wilmore one day with David, an elderly resident of Panchito, he stated:

‘People here are calm, look it is all open and we have a breeze. In Wilmore the houses are so close together. The air does not flow there. I could not live there. It makes people crazy. There is a lot of delinquency there' (David, Panchito).

In Wilmore, residents too expressed the idea that the identity of the locale was negative. Often this negative identity was based on the interactions and behaviours of community members. Residents felt more exposed to such behaviours because of the highly consolidated and densely built up nature of the barrio. This contributed to and reinforced the sense of tension and negative identity that residents and outsiders held of the community. In all communities a typical coping mechanism to deal with the intense heat particularly during the summer months was to sit outside the house in a shaded area or on the porch. In parts of Panchito, residents tended to have more space to be able to do this and the smaller population and less dense
nature of the built environment meant that the setting for doing this was more spacious and peaceful. In Wilmore, but also among roadside residents in Panchito, where housing density was greater, when sitting outside residents were more exposed to and complained about what they commonly referred to as ‘la bulla’ which is a term that would translate to ‘the racket’ caused by people and motorbikes in the street. For example as Julieta, a resident of the main street in Wilmore explained:

‘It is really noisy here. The people make a racket. They swear a lot. They drink a lot and they play music too loudly. It is not a quiet barrio… I feel really bad [to say I’m from here] because, look at what the barrio is like. For example, if you come here and you sit in the community for a few hours, after you too will say, I don’t want to live here. You’ll see indecency, you’ll hear profanities. You will see how everyone sits out in the streets and you hear it all from here.’ (Julieta, Wilmore)

Residents in Wilmore differentiated themselves from what they saw to be the identity of the community in a way that suggests that they felt disconnected from it. Rather than trying to dispel the negative image of residents, they themselves were actually often particularly vocal in confirming it, as demonstrated in the previous quote from Julieta but likewise as stated here by Emily:

‘Who would be proud to be from here? The Wilmore name is a good, trustworthy name but the barrio is trash. I have a lot of friends that won’t come to visit me because of its reputation.’ (Emily, Wilmore)

Emily and others suggested that Wilmore had a bad reputation in Samaná and that this was a cause of shame. Their sensitivity differed somewhat from residents of La Ciénaga who were much more resistant to negative stereotypes of the inhabitants. In Santo Domingo the labels ‘arriba’ (above) and ‘abajo’ (below) were commonly used to refer to the city and La Ciénaga respectively. While these labels refer spatially to the relative locations of the areas with reference to the city and the bridge that crosses the River Ozama, connecting the Western and Eastern parts of Santo Domingo, the terms were also used as a means of denoting the socio-economic status of their residents (see also Cottam 1998).
In La Ciénaga, residents, took ownership of such labels, referring casually to themselves as ‘los de abajo’ (those from below) and other residents of the city as ‘los de arriba’ (those from above). They use such binary distinctions in a topographical sense rather than as a pejorative measure of status (although they are undoubtedly aware of this alternative use), and as a form of resistance against negative perceptions of the population of the barrio that they feel to be held by others in the wider city environment. Instead they were keen to contest what they felt to be errors in outsider perceptions and emphasise the diversity of the community. As Sofia explained:

‘Not everyone down below is the same, while there are drug dealers there are also professionals. Students, teachers. There are a lot of university students and doctors. Not everyone is the same. There are those that spend their time doing bad things but there are others that do not accept this. There are two identities, one corrupt and one non-corrupt. The corrupt ones don’t work or study. The non-corrupt people work or sometimes they don’t work.’ (Sofia, La Ciénaga)

Residents in La Ciénaga suggested that outside, negative stereotyping and negatively held perceptions relating to community members can have materially detrimental effects. In particular in relation to accessing opportunities for employment in the wider city environment. Across the communities residents frequently expressed the opinion that employment was an important source of self-efficacy because it allowed them to be able to meet the households’ basic daily needs as well as invest in the house. The role of self-efficacy in relation to the community will be discussed in greater detail in the following section.

Self-efficacy.

Feelings of self-efficacy are said to be preserved when a place ‘facilitates or at least does not hinder a person’s everyday lifestyle’ (Twigger-Ross and Uzzell 1996: 208). Exploring the role that the community played in relation to residents’ self-efficacy meant asking residents to broadly describe the positive and negative aspects about living in their respective communities. I would then also, at times, ask them if and how these aspects impacted on them and their actual or desired lifestyle in ways that they thought were positive or
negative. In addition to this, another useful method was to ask residents how it felt, when they were in other areas of the city, to tell people which community they lived in. This offered insights into residents’ thoughts about what other people’s preconceived perceptions of their identities were. Again, probing residents about how they felt this did or did not affect their lifestyle often revealed interesting information about how perceived identities can impact on an individual’s own perceptions of their ability to carry out certain tasks which will be discussed here. The ways in which these perceptions impacted on self-esteem will also be discussed in the following section.

In La Ciénaga residents suggested that the stigmatization of ‘los de abajo’ led to the residents being denied access to work in the wider city environment. The following exchange with Carolina highlighted this point:

_HS:_ When you are elsewhere and you tell people that you are from La Ciénaga, how does it feel?

_Carolina:_ Some people don’t like it. Some people don’t like people from down here. We are very vulnerable people and they think that because we are poor we are lower than them. A lot of people think that way. But La Ciénaga is not like that. We work hard but some won’t give jobs to people from down here.

_HS:_ So how would you describe the people living here, from your point of view?

_Carolina:_ Well, how can I describe it...? We are humble people, good people. We are humble. Rich people won’t give a plate of food to anyone but poor people, for example, I give food to anyone. But rich people don’t. (Carolina, La Ciénaga)

Other residents expressed the opinion that they felt mistrusted and looked down upon in other parts of Santo Domingo for being poor, as suggested by Carolina. Additionally residents frequently stated that they felt as though ‘los de arriba’ were unable to look past the (very real) insecurities and in some parts, the unhygienic living conditions to acknowledge the diversity of residents in the community and give credit to the developments, socially and physically that have taken place there over the last couple of decades.
In addition to these social impacts residents suggested that physical aspects of the communities and the way that they have developed often had material consequences for their self-efficacy, particularly for those with reduced mobility. For example, although, residents often valued the natural environment in Panchito, the narrow and winding paths which cut often at very steep angles into the hillsides, or the steep narrow staircases made mobility a challenge for older members living in the higher parts of the community. David, an elderly resident of Panchito who walked to and from the city market every day to get daily household supplies stated:

‘I’d like them to change the paths because if they made the paths good you could get around easier.’ (David, Panchito)

In Wilmore, the sometimes disorderly and often densely crowded nature of housing means that away from road, the paths were incredibly narrow. One resident, Berta, who had had one of her legs amputated was now essentially confined to her house because, despite being in possession of a wheelchair, she found the cemented paths on one side of her house too narrow to navigate in her wheelchair (see Photo 47), and the wider but unpaved ones on the other side too difficult to do manage on her own (see Photo 50).

**Photo 47: Dense housing and narrow path taken from inside Berta’s house, Wilmore.**

Source: Holly Schofield.
In addition to impacting self-efficacy the interviews suggested the physical and social aspects of the community, as envisaged by residents and by outsiders, can impact upon residents’ self-esteem evoking a sense of pride or sometimes shame. This will be further explored in the following section.

**Self esteem**

The self-esteem dimension of place identity highlights how the physical and social features of a place impact individual evaluations of their own self-worth. It relates to more than just an evaluation of a given place suggesting instead that places can impact on a person’s overall self-esteem (Twigger –Ross and Uzzell 1996).

Residents expressed conflicting opinions in relation to their sense of self-esteem and the physical aspects of the community. On the one hand residents, across the communities, expressed an appreciation of the natural environment, even expressing regret in the more dense areas at its loss to construction. In Panchito, the greenest of the three communities, residents found the greater quantity of vegetation and views over the bay were a source of increased self-esteem stating that the environment surrounding them made them feel good in themselves. On the other hand, residents had to reconcile this appreciation with the fact that development, in terms of consolidated housing, cement and concrete, recreational areas and businesses signified increased wealth and development. It projects a certain desired identity both within the community and to the wider urban environment. This projected identity can provide residents with a sense of pride and subsequently a boost to their self-esteem. So while residents may gain self-esteem from the natural environment, they also gain it from the way they are envisaged by other urban residents.

Matias in Panchito felt that the views and natural environment boosted his self-esteem but that sometimes he felt a sense of shame because he resided in the upper part of Panchito, which is known for being less developed and poorer than the lower parts of the community straddling the roadside. In
explaining the differences (and in relation to Photo 34 shown in Chapter Six), he said:

‘This one is the barrio to show how they live down there. All of the houses are in good condition. There are no wooden houses in that part. They have more money and possibilities than we do up here... people down there build from block because shame does not let them do it with wood. These people have money anyway down there. There is not much that needs to be done because down there, there are opportunities... Look at the difference from there to here. It looks so different. Down there the barrio looks nice but up here it looks like a poor barrio where there is no money...’ (Matias Panchito)

In addition to these physical elements, the social dimensions of community life as well as outsider perceptions of it can also impact on residents’ self-esteem. As discussed previously, residents in Panchito tended to feel positive about the identity of the community because it was known for being a safe place to live and because people felt as though generally relations between residents were positive. Often residents suggested that to be associated with the community was a source of pride. As Catalina explained:

HS: How do you feel when you say that you are from here?
Catalina: I feel good because it is a quiet barrio, a good place. I have lived here for a lot of years and I know and get on well with my neighbours. If ever I’m ill, people come and visit. I have a lot of friends here, a lot of good neighbours. There are a lot of boys here that call me their godmother. I know who is who. (Catalina, Panchito)

A similar sentiment was portrayed in La Ciénaga where residents, whilst acknowledging the very real physical and environmental insecurities present there were keen to emphasise the diversity of the community and their determination not to allow negative stereotypes to dominate. As previously mentioned people were generally positive, even proud about being from the area. As Manuela stated:

HS: When you are in another part of the city and you say I’m from La Ciénaga, how does this make you feel?
Manuela: I feel very proud. Anyway imagine, what am I going to do if I say that I am not from the Ciénaga and they go looking for me? (Manuela, La Ciénaga)

These sentiments differed somewhat from those expressed by residents in Wilmore who frequently acknowledged that the community had developed a negative identity and that they as individuals did not feel connected to it. Residents were keen to separate themselves from the dominant identity often expressing a sense of embarrassment, and at times shame, to be associated with it. Long term resident of the community, Natalia emphasised this point:

‘When you go to another place and they mention Barrio Wilmore they say ‘Barrio Wilmore, you can’t enter there, it’s a base for drug addicts, delinquents.’ So for someone who lives there it makes you feel shameful…’ (Natalia, Wilmore)

Residents suggested that the disconnect is occurring because residents perceive the community identity to be changing in a negative way and in doing so it was disrupting a community identity that had once been deemed to be more positive. This notion is best explored through the concept of place-congruent continuity and will be the subject of the following section.

Continuity

In the previous chapter it was shown that two types of person-place relationship exist in relation to the continuity aspect of place identity, place-referent and place-congruent continuity. Place-referent continuity refers to the maintenance of links with places that hold emotional significance whereas place-congruent continuity refers to the maintenance of links with places that are congruent with a person’s identity as a certain ‘type’ of person (Twigger-Ross and Uzzell 1996).

People can maintain continuity in their self-conception by seeking out, or living in places, in this case the community, that are socially and/or aesthetically congruent with their own perceived identity in the way that residents in Panchito described. Although some of the physical attributes of place are considered to be generic, transferable and modifiable within certain
boundaries (Twigger-Ross and Uzzell 1996) the social characteristics of a community are less within the control of the individual.

Interviews and observation in Wilmore suggest that when there is a disconnect between an individual and what they envisage as being the dominant social identity of the place caused by some form of social change, this causes a break in the principle of continuity and can lead to feelings of ‘not fitting in’ or not belonging. This, in turn, can lead to the severance of social ties and a withdrawal or isolation from the community itself.

During interviews in Wilmore, almost all residents discussed their concerns about or dislike for the community based on increasing rates of delinquency. They envisaged this to be a result of the changing nature of youth behaviour and an increase in newcomers to the community who do not share the traditionally positive community values. Older and also long term residents were particularly impacted by the insecurity that they currently felt because they perceived it to mark a change from the community as it used to be. It was this increasing insecurity that was breaking the continuity principle. Although this was also felt by younger residents who had grown up in the community. For example Mia stated:

*HS:* What are the negative aspects about the barrio?

*Mia:* ‘...There are young people that behave badly which there did not used to be. A lot of people have arrived from other parts with their bad behaviour. In that way it has changed.’ (Mia, Wilmore),

The interviews suggested that the ways in which residents perceived the community dynamics impacted on the ways in which they interacted with other residents and neighbours. For example, the result of a dynamic, such as that in Wilmore, where the dominant community identity is envisaged as negative is that residents begin to feel a sense of shame and embarrassment to be from there, which has resulted in the development and maintenance of a far more individualistic and fragmented, even insular community culture as explained here by Samuel:
Samuel: What really affects us here is the delinquency, the gangs. They steal things. It’s ok though as we are people that don’t involve ourselves with anybody, you know? …Wilmore used to be ok but the cases of delinquency are increasing. Here we have to sleep with the doors locked, you know, when we bought this house there were no railings.

HS: So do you feel better here having made these changes?

Samuel: Yes I feel more secure. Now we have a good door in the kitchen. Here we don’t really get involved in anything.

HS: Is that how you would describe life in Wilmore? Everyone in their own home?

Samuel: Yes!

(Samuel, Wilmore)

The experiences in Wilmore differed somewhat to what was occurring in Panchito and La Ciénaga, where people generally felt a greater sense of unity and affinity with their neighbours despite physical insecurity in the community still being an issue. In Panchito and La Ciénaga they were able, for now at least, to overlook negative images as the result of isolated behaviours, and not consider them representative of the community identity.

An analysis of the perspectives of place identity in the three communities has revealed two main themes which repeatedly feature in the characterisation of the dimensions of the concept. The first relates to opinions and values on the physical characteristics of the communities and how they perceive this to reflect the identities of the residents. The second cross cutting theme relates to insider and outsider perceptions of the residents identity based on the community reputation and the behaviours of community members. The way that these features interacted with residents’ capacities and strategies in the face of climate change induced disasters and severe weather events will be explored in the following section.
Place identity and adaptive capacity

Physical characteristics.

The physical characteristics of a natural environment which were valued for being distinctive, calming and boosting self-esteem can become problematic during disasters and as a result of severe weather. Outside spaces which were described in Chapter Six as being important sites for family and neighbourly interactions and for carrying out everyday tasks and which were discussed in this chapter as being important for allowing residents to escape the heat felt indoors, lose their functional and aesthetic value after periods of rain for varying quantities of time. If not cemented they become muddy which inevitably invades the inside of the house and sometimes can even prove to be dangerous. When visiting Isabella, in Panchito one day I arrived to find her sat outside the house with her bandaged foot up on a chair. When I asked her what had happened she informed me that she had slipped on the mud outside of her house and impaled her foot on a sharp piece of broken tile. The wound subsequently became infected and left her unable to work for several weeks.

Photo 48: Outside communal space after rain, Panchito.

![Photo 48: Outside communal space after rain, Panchito.](image)

Source: Holly Schofield.

In La Ciénaga by the riverside where residents tended to sit outside their houses, the swelling river caused by rains immediately flooded homes but
also, once it receded from the area it left behind a terrible smell and contaminated water which residents associate with increased cases of illness particularly among the children.

**HS:** What are the good things about living here?

**Manuela:** The good things about living here is that when it is not raining and there is sun it looks really nice here. But when they say that it is going to rain, you see what the river is like (points to water that has obviously come in from the river), When the river goes back it leaves a really awful smell. And when it rises it floods to all of the way back there. When it goes back it leaves water everywhere. (Manuela, La Ciénaga)

**Photo 49:** Outside Manuela’s house after the river had retreated, La Ciénaga.

Residents living in the highest parts of Panchito, often expressed the opinion that they were fortunate to have the view and fresh sea breeze that they enjoy on hot days, however they also felt very vulnerable and as though they face greater exposure in the face of storms and hurricanes. Trees that are valued for their beauty and for the shade and fruit that they provide become feared in the event of a storm with residents recounting stories of how strong winds have knocked trees onto houses causing serious injury to residents. Alejandra explained this sentiment:
'It is the heat that affects me most and the cyclones because they can destroy everything. When they come, houses like this get lifted up. They knock all of the trees down. A lot of people die'. (Alejandra, Panchito)

Despite the fear residents express relating to disaster impacts, a greater issue on a daily basis was the way in which rainfall makes the network of paths cutting through the vegetation throughout Panchito and parts of Wilmore, difficult to navigate, even dangerous in some parts. For Berta, the wheelchair user in Wilmore discussed earlier, parts of the community that were already difficult to navigate became out of bounds during and after rainfall because of the mud and or the accumulation of water in some parts made it impossible for her to pass in the wheelchair. Photo 49 shows one of the two paths leading to her house from the main road in Wilmore which was impossible to pass after rain.

**Photo 50: Path leading to Berta's house, Wilmore**

Source: Holly Schofield

In Panchito, residents frequently complained of the difficulties they faced in moving around after rainfall although this was something that I also experienced first-hand on a number of occasions whilst carrying out research there. Photography participant Isabella in Panchito stated in relation to Photo 51:
‘The water collects here...just down there. That’s the way I go. It is difficult to go that way in bad weather. You can’t pass and you fall over there’ (Isabella Panchito)

Photo 51: Path prone to waterlogging, Panchito.

Source: Isabella, Panchito.

The hilly topography of the community also means an increase in the incidence of landslides. Photography participants Valentina and Matias as well as those who took part in focus groups raised concerns about the number of landslides taking place in the community. They cause damage to people’s property and make certain footpaths difficult to use (see Photos 52 and 53). For some residents who have built into the steep hillsides, the erosion of the land caused by rainfall is putting the houses at risk of collapsing down the hillside.

Photo 52: Landslide/collapsed pathway, Panchito.

Source: Valentina, Panchito.
In addition to the problems faced by residents in terms of their mobility they were concerned that the muddied shoes and clothing caused by the wet footpaths contributed to outsider perceptions of the residents as being poor and dirty. Prior to leaving the house one afternoon with Isabella to walk out of the community she filled a bottle with water and placed it in her bag. The paths that afternoon were waterlogged and slippery to the extent that Isabella removed her shoes altogether and walked part of the journey barefoot to save her shoes from being destroyed, as many pairs had been. Upon our arrival at the roadside, Isabella produced the bottle of water that she had brought from the house and proceeded to clean our shoes and her feet with it. As we continued the journey into the town she explained that the low quality footpaths were a feature that set Panchito apart from other, more consolidated communities but that it also set apart the higher and lower parts of the community where the poorer and wealthier residents lived respectively. She explained that people knew that you were poorer if you had mud on your shoes because poorer people could not cement areas that tend to get muddy in the same way that people living by the roads had done.

This was also a theme that emerged repeatedly in discussions with long term residents in La Ciénaga. In discussing changes in the community they noted
that the community was known as a dirty and squalid place particularly throughout the 1990’s when less of the community had been cemented and the networks of paths between the tin houses were formed of a type of mud and silt from the river. Older residents discussed how they felt that their muddied shoes and clothes contributed to their stigmatization in Santo Domingo for living below the bridge. They suggested that the mud contributed to framing the residents as dirty and poor. As stated by Carolina:

‘...All of this before was mud. And when it rained it was so bad. You had to walk with a bottle of water to clean your shoes all of the time and with carrier bags so you did not look as poor up above and now it is much better because it is all cemented and the streets have tarmac…’ (Carolina, La Ciénaga).

Residents have to reconcile their appreciation of aspects of the natural environment such as increased vegetation cover, with the type of identity that they wish to project. Concrete and cement represent wealth and progress for many low income residents which meant that given the opportunity, they opted for the cementing of open spaces and footpaths typically by leveraging materials from the municipality when possible. For example, residents in all communities had obtained cement from municipality and created paths, such as the one shown below in one part of Panchito which allowed them to connect parts of the community and ensured that people living in that area could exit the community without getting muddied clothing during and after rains.
In this sense the cement was valued, not only as a means of improving living conditions but as a means of resisting stigmatization and presenting a different identity in the wider city but also internally within the community environment. In La Ciénaga, Clara emphasised the value that the increased use of cement on shared spaces, paths and the initial entry points to the community had on the way the community was perceived:

‘There are cemented patio areas that we didn’t have before. It used to all be earth so there was a lot of mud…The entrance to the community is nicer now too. It did not use to be like that but they fixed it up and now it has a different appearance. The barrio can be seen in another way now because, La Ciénaga, when I was younger, it was terrible. This was all yellow mud.’ (Clara La Ciénaga)

Such self-help methods are not always completely unproblematic however and can, at times, have maladaptive characteristics in that they can cause negative outcomes for residents in other parts of the community as discussed in Chapter Two.

The steep path cemented into the hillside in Panchito shown in Photo 54 can be seen as an example of this. The path was partly blamed for facilitating an increased flow of rainfall onto another resident’s property at the bottom of the hill where it makes a sharp turn to meet the road. Overtime this has
destabilised the earth surrounding her house and led to small landslides which have damaging the outside latrine and self-built contention wall as shown in photos 55 and 56.

**Photo 55: Landslide onto latrine and house, Panchito.**

![Image of landslide](image-url)

Source: Holly Schofield.

**Photo 56: Damage to resident’s self-made contention wall, Panchito,**

![Image of contention wall damage](image-url)

Source: Holly Schofield.

Similarly, in La Ciénaga, Carolina suggested that it was the increased construction of houses and use of cement in the parts of the communities bordering the river which meant that there was increased flooding for these residents:
‘When I first built [the house] the river would rise whenever it rained a lot, but it would flow away well. But now, I think with so many houses and concrete at the riverside, there is not the same width to the river to let it flow down. Now it does not really have anywhere to go so what it does is it leaves water here.’ (Carolina, La Ciénaga)

This section has explored the ways in which the opinions towards and values placed on the physical characteristics of the communities, as well as ideas about how these characteristics reflect residents’ identities interacted with their capacities and strategies to confront climate impacts. The second cross cutting theme from the analysis of residents’ place identity related to the way in which residents themselves and outsiders perceive their identity as a result of the social interactions and behaviours of other community members. The way this impacts with adaptive capacities will be the subject of the next section.

Perceptions of identity.

Existing theories relating to place identity hypothesise that the development of a negative image of a place can cause people to experience feelings of stress and displacement leading to lowered self-esteem and self-efficacy. In relation to adaptation, the concern is that this can, in turn, lower individual and group capacities to respond to environmental threats by causing a type of avoidance of situation and the changes that are occurring (Fresque-Baxter and Armitage 2012). This would suggest that in communities such as Wilmore, where place identity was overwhelmingly perceived as being negative, and residents expressed a sense of shame to be associated with it, adaptive capacity would be lower than in the other communities that possessed more positively held social identities.

However, while this framing of Willmore as distinctive for negative reasons appeared to lead to a fragmented, sometimes more insular community culture and while residents expressed that the reputation even lowered their own feelings of self-esteem, there was no evidence to suggest that this translated
to inaction in terms of household adaptation to disasters and severe weather. Nor did it suggest that all residents of Wilmore were any less able to confront such events than those in Panchito or La Ciénaga where identities based on social behaviours were imagined on more positive terms.

This required discussing with residents the weather impacts which most affect them individually and as a community and also how they responded to them. We discussed any current or future plans to modify the house and surrounding environments and what the motivations for making them were. Participant observation also allowed me to see the modifications that residents in some areas were actively making to their houses and surrounding areas, though it is important to note that for much of the time that the research was being carried out, many (although not all) residents’ construction plans in Wilmore were placed on hold whilst they awaited the outcome of their battle against the community’s eviction.

These interviews and observations from Wilmore, when analysed and understood alongside those which came out of the more positively understood social environments of Panchito and La Ciénaga suggested that while a positively perceived identity can be beneficial it is not essential, nor the only factor that can encourage household adaptation to weather events.

Many residents suggested that a lack of alternative options about where else to live was a central reason for why they had not or could not move from the community. The response 'no hay dónde ir' which translates to ‘there is nowhere else to go’ was frequently given to questions about pull factors encouraging residents to remain in Wilmore despite the negative and worsening social dynamics. Within this context the house and feelings of being ‘at home’ within it took on a greater significance and could make the negative social dynamics present in the community more bearable as expressed here by Joanna:

‘I feel a bit ashamed to say that I am from here because in this part there are a lot of delinquents and because of them we all pay but I’ve felt ok up to now because I can just be in my house. Here in my house I feel good and I don’t have to see what goes on.’ (Joanna, Wilmore)
As such, residents continued to strive to enhance their household sense of place by continuing to modify and consolidate the house and often surrounding environments where resources permitted. In some cases such as Joanna in Wilmore, residents prioritised and valued carrying out aesthetic modifications which reflect identities and contribute to the creation of feelings of homeliness. Other residents had made larger scale structural modifications, with a range of motives, but which had also served to increase the household capacity to confront severe weather and disaster impacts. Some of these residents used the opportunity, whilst modifying the house, to reduce the impacts of localised risks outside, even if they may not have otherwise carried out such activities. For example, Romina in Wilmore explained that when laying a cement floor in her house she got her son to cement in modest drainage outside to divert flowing water during and after rainfall.

**Photo 57: Romina’s house with self-built drainage, Wilmore.**

Residents’ place planning and place imagining activities also suggested that a negatively held perception of place identity does not necessarily impact on plans or desires to enhance the household sense of place in ways that may support adaptation. Discussions with residents about what plans they had for the future for themselves and in terms of for their house and surrounding
environment offered insights into residents’ place related hopes, desires and aspirations which they themselves often related to the types of modifications and changes that they would like to make to their houses. These modifications often depended on the households current situation in terms of existing level of consolidation, but often residents imagined converting to cemented block walls (if they did not have this already) with a cement rather than tin roof and often then with a second level (particularly those that already live in a concrete structure) along with cementing outside spaces. That residents were still planning, imagining and discussing what changes they will or would like to make in the future to their existing structures, suggests that the negatively held identity did not impact on plans or desires to enhance household sense of place in ways that support adaptation. The uncertain times in which the residents of Wilmore were living caused by the possibility that they were to be evicted meant that they were less bound to imagining consolidating their existing structures. That a majority continued to imagine themselves in an enhanced version of their current structure suggests that the desire to enhance their household sense of place is a stronger force than negatively held perceptions of community identity.

This section has explored residents’ place identities in the three communities as well as the consequences of these place identities in relation to adaptation to disasters and severe weather associated with climate change. The following section turns the focus to the two remaining dimensions of the sense of place; place dependence and attachment and similarly explores the role that they play in the adaptive strategies and capacities of urban poor groups to such events.

7.2 Place dependence and the community.

Community location

Place dependence highlights the ways in which people make positive evaluations of a place on the basis that it allows them to meet their needs and goals in comparison to other places (Stokols & Shumaker 1981). For the urban poor in the case study communities, community dependence was undoubtedly shaped to a certain extent by the need to be close to income
earning opportunities. Proximity to work was fundamental to keep daily travel costs and also time spent travelling to a minimum. This need to be close to opportunities for employment combined with a shortage of affordable urban housing discussed in the previous chapter meant that those in pursuit of work in the city necessarily reside in densely packed in communities of self-built housing, usually on the most marginalised land with greater exposure to environmental risk. Again, this situation is very common in cities of the South (Moser and Satterthwaite 2008)

Although the central location of Wilmore was frequently cited as a positive feature of the community because if afforded quicker access to the central markets and bus station, residents in Samaná did not tend to identify proximity to employment opportunities as a key element of their community place dependence. This, perhaps a result of the small size of the city which meant that none of the communities were particularly far from the centre of town. Location was central to the place dependence of residents in La Ciénaga however, most likely owing to the significantly greater size of Santo Domingo.

Place dependence, community location and adaptive capacities.

In Chapter Six, the need and desire for homeownership was shown to mean that the urban poor often made a positive evaluation of a location if it allowed them to own a home there, even if it meant living with increased environmental risk. Place dependence when shaped by the need to be close to employment opportunities had the same impact. At the time of the research the government was in the process of building a new housing complex in the North of the city to which they were going to relocate around 5,500 residents from one of the city’s other riverside communities. Residents often reflected upon these government schemes and the quantities of people that return to the communities despite being offered relocation housing. Although social factors were also often considered to be a pull factor, distance from income earning opportunities was also frequently blamed for why some residents
were unable to adapt to the new relocation sites. As Carolina in La Ciénaga explained:

‘The government moved those people to places where they did not have the means to find food. They were dying of hunger out there. With what they had to spend in going back and forth on public transport, they just could not do it. A lot of people moved back because of that, because they did not have ways to get money. So you can have a nice apartment, but if you cannot cook…I had a friend that was moved out there with her four children but said ‘how can I live in this apartment if I cannot even feed my children?’ So, she sold her apartment and moved back to the riverside.’ (Carolina, La Ciénaga)

Despite the importance of community location in urban poor dependence, residents tended to express that relationships held between other members of the community also played a very important role because it meant that that the community met many of their functional daily needs. Many, although not all of these relationships were with family and neighbours and whilst they had functional benefits (which will be expanded upon below), they were also, usually based on feelings of affection. These relationships, in turn caused an increase in the emotional significance of the community itself. Or, in other words, they increased many residents’ sense of community attachment. In this way the relationships contributed to both residents' place dependence (a functional relationship) and place attachment (an emotional relationship). For this reason, although at times the relationships more forcefully impact upon place dependence or attachment, to avoid repetition of aspects that feature in both types of relationship, the two constructs are discussed together in the following section.

The remainder of this section will explore which relationships residents expressed as being fundamental to their community dependence and attachment, why that was the case and what, if any role they played in their adaptive capacities and strategies in response to climate events.
7.3 Place dependence and attachment and the community.

Community relations: family, neighbours and compadrazgo.

Residents across the communities expressed that family ties to the area were a significant source of place dependence and attachment. Residents regularly described the value which they placed on the areas in which they lived because they were also home to a number of family members and because of the local functional, financial and emotional, support networks that they possessed as a result.

For many residents, particularly women, having family living close by was an important feature of their place dependence because it gave them a means of sharing childcare responsibilities that enabled them to go to work and/or have the capacity to run errands when necessary. As Clara in La Ciénaga explained:

‘I have my family here so if I have to run an errand or something I can leave my daughter. All of the people living in this part are my family. I know everyone living in this part’ (Clara La Ciénaga).

In some cases families pooled resources and shared cooking duties. It also at times provided a sense of security for families who felt as though they were better placed to care for older family members as they became frail or if they should fall sick. While residents frequently explained this added benefit to me during interviews, the onset of the chikungunya epidemic which had far reaching impacts in the three communities (and indeed beyond) provided the opportunity to observe these advantages in practice. The close proximity of family members also had other financial benefits for particularly low income families. Where particularly low-income families lived on the same plot of land it was not uncommon for only one household to possess a cooking stove and gas tank. These cooking facilities would be used for the benefit of the entire family, both in terms of a shared resource and as a means of money saving as the cost of fuel was shared between them.
Families’ physical place making activities in the communities often support the development of place attachment by ensuring more frequent, prolonged and often higher quality social interactions can take place. Families had, in a number of places, subdivided their plot of land, or at least built in close proximity to each other often sharing a communal social area where they could sit, eat, wash and dry clothing and where the children could play. Clusters of houses, such as those shown in Photo 58, often shared an outside space and provided a site for social and family interactions to take place. They also provided a site for functional tasks often too difficult to carry out in cramped kitchens including storing water, preparing and cooking food and keeping animals.

Photo 58: Cluster of family houses in Las Colinas I San Pedro de Macorís.

![Photo 58](image)

Source: Holly Schofield.

Photo 59: Resident sitting in the shade preparing food for lunch, Panchito.

![Photo 59](image)

Source: Holly Schofield.
When conducting interviews and spending time with families in Panchito, I was able to observe, first hand, the ways in which doors to all houses in these family groupings would typically be left open (in part, it seemed, a coping mechanism to deal with the intense heat) which also facilitated a constant stream of adults and children entering and exiting houses, sitting for a moment to chat, or looking to borrow something. In the more densely packed communities of Wilmore and La Ciénaga it was more common for households to subdivide existing houses to make a space for family members to live there. Such actions provide the setting for important memories of key moments and shared experiences to be formed and consequently increase the emotional significance of the place.

In many cases where female headed households lacked family of their own in the community, they had formed fictive kinships with another female resident living close by. These relationships, which adopted many similar characteristics and functions as those found between family members, also had positive impacts on place dependence and attachments. As introduced in Chapter Five, it was not uncommon for residents heading their households use the term ‘comadre’, usually meaning godmother but in this case, to describe a particularly strong relationship and connection with another female neighbour. These positive relationships have the resultant effect of providing female residents with support and the means whereby they generally felt more attached to the community as a direct consequence of that relationship. In relation to a neighbour who I later learned was her comadre Daniela in Panchito stated:

*HS:* Is there anything else that you like about living here?

*Daniela:* I have a neighbour that I get on really well with. Because of her I like it here. We have always got on really well. We are united. We are always together. If I have problems she helps me and vice versa. She really helps. I was happy to find her. (Daniela, Panchito)

Often female residents counted on their comadre and her family to undertake the type of duties for which other households may rely on neighbouring family
members. As a single, working mother of three this replication of an almost familial relationship with her comadre was incredibly important to Daniela in Panchito. Daniela who had recently separated from her husband was able to go and work as part of a team of casual cleaning staff in a hotel in the tourist town of Las Terrenas around forty five kilometres away from Samaná. The distance and working hours meant that whenever she went to work there, she needed to spend at least one night at a friend and co-workers house. This meant leaving the children alone in her home in Panchito overnight as her ex-husband no longer lived in Samaná town. She felt comfortable doing this because she knew that her comadre and family would take care of the children:

‘I can go and leave my children here alone and nothing bad will happen. The neighbour keeps an eye on them and cares for them. In other barrios it is not like that. They leave them but then people do damage to them. They hurt them. Here, I have the confidence that I can leave them and they will be looked after by my neighbour. Other barrios are not like this. For this reason I like this barrio. Even if the children are alone the neighbour calls around to check on them.’ (Daniela, Panchito).

In addition to these important links between family members and comadres living in close proximity, residents’ sense of dependence and attachment to the community was also shaped by positive and supportive relationships between neighbours, usually those living in the immediate vicinity. These relationships will be discussed in the following section.

The importance of positive relationships with neighbours was particularly emphasised as being central to the urban poor sense of place of residents in Panchito and La Ciénaga where residents expressed that they often drew upon neighbours to perform many of the same supportive actions that family members would. These included sharing resources and child care duties as discussed in the previous by Daniela in relation to her comadre. Focus group participants and close neighbours in Panchito discussed their relationships:

Participant 3: I like living here.
Participant 1: Yes, I can’t complain about living here
Participant 3: It is good, everyone keeps themselves to themselves and neighbours look out for one another.

Participant 1: It is very united

Participant 3: If anybody needs anything we help each other.

Participant 2: The only thing is that she doesn’t have money to give to me!

Participant 1: [Laughing] I don’t have money to pass around but we have love.

Participant 3: We have it better because we live united, for me my neighbours are like part of my family. (Focus group, Panchito)

These types of neighbourly relationships based on affect tended to occur more frequently in groupings where all members of the group perceived themselves as being more or less on a similar level in terms of their socioeconomic status and economic capacities. In places where relationships were positive but one neighbour was perceived to have a greater socioeconomic status however, the relationship was often based more on function than affect.

As discussed in Chapter Five, all three of the communities were diverse, dynamic and heterogeneous places. In each of the communities, housing quality and size was not always representative of a family’s actual economic capacity as may be assumed. This was often because of the propensity for residents with family members living abroad to make use of remittances, or money earned abroad to invest in and upgrade the house (but it can also be from other less legal activities). Consequently a common feature of Dominican communities was that there were people with similar social and economic status living side by side in vastly different quality of housing. That said Chapter Five also pointed out, it is also the case that the communities were also home to residents with greater economic potential living in larger and clearly more expensive houses, perhaps taking advantage of the comparatively cheaper cost of constructing on untitled land (see Photo 60).
Photo 60: Highly consolidated house in Panchito.

Source: Holly Schofield.

Photo 61: Some lower quality houses, Panchito.

Source: Holly Schofield.
This type of living situation was not uncommon in the three communities. In such cases, it was not rare for the households to nurture positive relationships and benefit from the subsequent transfer of different types of support between them.

The types of support exchanges between neighbours differed in their financial value and frequency. At one end of the scale some residents explained that they had turned to a wealthier neighbour in times of financial difficulty for ‘un ayuda’ a term which, despite referring to the Spanish word for ‘help’, is commonly understood to be financial in nature. Relying on a wealthier neighbour circumvented the need for families falling on hard financial times to make use of informal money lenders and was undoubtedly valued for that reason. Whether or not his money was ever paid back was not always clear but in most instances the suggestion was that both parties understood that ‘un ayuda’ was not a loan. At the other end of the scale some neighbours had directly financed larger-scale projects that have positive outcomes in terms of adaptation to and coping with climate events. This will be discussed further in the following section which explores the role that community place dependence and attachment, as characterised through relationships with
family members and neighbours discussed in this section, plays in the adaptive capacities of the urban poor in the three case study communities.

Community relations and adaptive capacity.

Close family and friend relationships have been noted in the literature on social capital as it relates to disaster and climate change adaptation as being ‘associated more with survival than development’ (Pelling 2011b: 5). This suggests that while they may be an important source of coping with immediate shocks they do not necessarily create proactive adaptation which as discussed in Chapter Two implies a more long term focus (Adger 2003). Whereas family links have been associated more with coping than adaptation, interviews carried out with family members suggest that family and fictive kinship based place dependence and attachments do have the potential to impact long term capacities to adapt admittedly in subtle ways that may not necessarily be obvious if solely viewed through an objective climate change adaptation lens.

Based on techniques adopted by Hidalgo and Hernández (2001), I regularly asked residents if they had ever considered leaving the communities as means of encouraging them to imagine breaking their local attachments and dependencies and as a means of overcoming suggestions that the sense of place is often an unconscious emotion that only comes to the surface once disrupted (Brown and Perkins 1992: 283). I then would ask them what the main factors were prohibiting them from doing so. Residents repeatedly suggested that the satisfaction of many of their emotional, physical and functional needs by family members and ‘co-madre’ relationships produces a greater commitment to the community. This particularly seemed to be the case for adult children who frequently expressed the opinion that should the opportunity arise to move to another area with a lesser degree of environmental risk, they would not want to relocate if that area was far away from family.

For example Gabriella in Panchito lived with her husband and three children in a house opposite that of her mother and stepfather separated only by a footpath that cuts through this part of the community. Perched precariously on

243
the side of an eroding hillside. Gabriella and her family lived with some of the greatest environmental risk in the community to the extent, as previously mentioned, that the house was splitting down the middle. Gabriella was one of the very few participants in Panchito that tended to discuss the community in negative terms and she did so because of what she considered to be an increase in incidences of drug taking and delinquency as well as a diminishing sense of unity. That said, despite this outlook she accepted that the presence of her family in Panchito meant that she would not want to move away from the community,

**HS:** Have thought about leaving here?
**Gabriella:** Yes
**HS:** To go where?
**Gabriella:** Near Sánchez because [my husband’s] father has land there but I said no because it’s far from my family and it’s far from my church. (Gabriella, Panchito)

Often if I then asked residents if they would leave if hypothetically they could take their whole family with them, they indicated that they would not, responding with comments such as ‘here is where I have grown up’ or ‘here is where I have raised my children’ indicating a deeper level of emotional attachment to the place (and not only to the people within it) based on memories and familiarity.

Over time the aspirations of younger residents to enhance their sense of place and own a cement block house or at least invest more in their houses, as discussed in the previous chapter, had the resultant impact of slightly increasing their own ability to better resist the impacts of weather events even when the desire to do so was not always the sole motivating factor.

Chapter Six showed that Gabriella was particularly keen to construct her house with cement block to change her self-image and not appear to be as poor in the eyes of others. The land that she and her husband had cleared to start construction (see Photo 31), was only a few meters from her parent’s house yet this time they ensured that the land upon which they construct is
set back from the hillside to ensure that they would no longer be at risk of landslide or face as much exposure to strong wind and rain.

Sofia, in La Ciénaga had been given the finances by an employer to build a concrete house and she did so in exactly the same place that she had lived previously in a tin shack. Although space and land availability issues also probably played a role she expressed that it was because she had not wanted to move away from her comadre who, in the absence of close family provided her with significant support. When constructing, as mentioned in Chapter Six, she took the localised environmental risks that she had been living with, such as localised flooding from nearby drains during heavy rain, and the fact that residents feel the community to be sinking over time into consideration and built in measures to reduce their impacts.

Fortunately for Sofia however she had been loaned all of the finances to make the conversion from a tin to block house in a relatively short period of time. Not all community members have access to such finances and as a consequence, larger scale adjustments are likely to occur at a much slower pace with progress likely to be vulnerable to livelihood shocks.

As was the case with positive family relations, strong relationships with neighbours also tended to cause a commitment to place that was conducive to investment in housing, even if this is a long term and not necessarily a particularly secure process. Residents living at the river’s edge in La Ciénaga, such as Manuela, said she did not want to leave the riverside unless it was from her current rented house to a home of her own but she also listed the positive social relationships that she had with her neighbours as being a significant pull factor to remain where she was. She explained that she enjoyed sitting outside and spending time with her neighbours, most of whom had been there for a decade or more, and enjoyed the supportive environment that they had created over the years which was important to her as a single female head of the household. Manuela was also actively making small investments in her house as and when she could even though it was rented.
Positive neighbourly relations among people of a perceived equal socio-economic status were less likely to result in proactive adaptive actions of shared spaces even where they had identified the need to make small amendments and recognised that collectively they may not be too difficult or expensive to realise. For example, during one focus group which took place in Panchito, residents living in close proximity to each other discussed their dislike of the fact that the shared outside space and the narrow path ways between the houses were un-paved. This was because it made access to the houses difficult during and after rain. It also meant that it became unusable until it was dry. Residents also complained that the mud dirtied clothes and shoes at best, or ruined them completely at worst. It also made extra work for female family members attempting to keep the inside of the house clean from the mud that they and the children inevitably walked in. During the focus group one resident recognised that they could each contribute a small amount of money to pay for the materials required to lay a cement path between the houses and one connecting their house to the cemented path which leads to the main road. Despite others present agreeing with her no plans were made to carry out the work. When I visited the community one year later, the residents had still not taken action to lay any cement.

HS: *What are the negative things about living here?*

Participant 2: *I really do not like the mud.*

Participant 3: *Yes but the mud is not anybody’s fault, it's from the river*

Participant 1: *It is normal because it has been raining.*

Participant 2: *I just don’t like it when I have to go to work and it is so muddy. What we need to do is get together to buy cement, make a walkway and then we don’t have to walk through the mud anymore. It is like this because we haven’t gotten together to do this. It is what I most want. You know, if everybody got together and gave something. You know, one person buys sand, another, cement, then we won’t have to walk on the mud anymore.*

Participant 3: *But you can’t do this on your own. If I could do it then I would but other people don’t. We could fix it with 500 pesos.* (Focus group, Panchito)
The residents suggested that issues of financing and a lack of organisation between neighbours constrain action.

Positive neighbourly relations between those neighbours of differing economic capacities often had more immediate and long term positive impacts on residents’ adaptive capacities. In Panchito the contention wall built to reduce the risk of landside onto Alejandra’s house (shown in Photos 63 and 64), was carried out in part due to the relationship that she had nurtured with a neighbouring household who had a far greater economic capacity and made finances available for the labour costs of building the wall. The financial resources for the costs of the materials were made available by a friend of her neighbour who resided in the USA but who had met Alejandra when visiting. Alejandra had stated that the total financial donation was as much as 1000 Euros.

*HS:* How did you [build the wall]?

*Alejandra:* …This neighbour, he helped me. He goes abroad and he paid a Haitian for two days of work to put this up because he was worried about it too. He helped and cooperated with the materials too. (Alejandra, Panchito)

**Photo 63: Concrete stairs and contention wall, Panchito.**

Source: Holly Schofield.
Indeed this was not an isolated example. In La Ciénaga, Carolina was able to build a raised cemented floor in her house thanks to her close links with her neighbour with greater economic capacity:

‘Whether it rained or not, the house was always full of water so I was sad. I thought, who will help me to build a house. For me, to do anything in the house or in the kitchen…for example, it was always full of water, if I was going to cook it was always like that. I dealt with it because I had no other option. That is what I had and I just had to be in the water for a time…The neighbour, he felt sorry for me. I was sat there crying and he said ‘why are you crying? And I said ‘because I do not have my floor’ and he asked me ‘how much does it cost to lay a floor?’ so I enquired with a man who gave me a bill of how much it was going to be and the neighbour paid it.’ (Carolina, La Ciénaga)

This same neighbour on a different occasion financed the majority of the cost of the laying of the cement in the communal space joining all of the houses in that area, the access points to them, and some of the area behind Carolina’s house which improved access for her neighbours living closer to the water’s edge. The actions were carried out with help, in terms of manual labour, from Carolina and another neighbour.

In such situations, where the wealthier neighbour bestowed a measure of good will on their neighbours they did often gain an increased social standing
from people living in the vicinity and the neighbours often respond with other non-monetary ways to nurture the relationship. As Carolina explained in relation to her neighbour,

*Carolina:* I cook things for the man that lives in that house; we help each other, you know, when the children are at school.

*HS:* So you have support here?

*Carolina:* Yes, he has money. I wash up for him, wash clothes and do his shopping and cook things for him. (Carolina, La Ciénaga).

In addition to this, at times, the actions that had been carried out did have other positive tangible outcomes for the wealthier neighbour. For example in La Ciénaga, cementing the shared space between the houses had reduced the localised impacts of rain outside and inside of the houses as the mud no longer entered. In this way the cement also had clear benefits for the neighbour who paid for it and also lived in that same riverside area. In the case of Alejandra, the neighbour who financed the construction of her contention wall lived in one of the houses that essentially looked down what would have once been the steep slope down to where Alejandra’s and other houses were located. Although it was never said to me by the people living in that area, it also seems rational to suggest that, in the long-run, the neighbours, for the sake of securing their own house overtime, also possessed an interest in ensuring that the slope remained secure with the added bonus of the increased social standing for having financed such a large project.

That there needs to be positive relations for residents to invest in improving the environment of their neighbour is irrefutable but whether or not any of these neighbours would still have adapted the environments of their neighbours if they did not live in such close proximity is less certain. Often in such cases, the neighbours who had received this support, while certainly grateful, described the transfer in terms of it being expected because the neighbour could afford to do it. In this sense these relationships appear to be based more on function than on affect.
There was no evidence to suggest that these activities created a significantly stronger friendship between residents nor did they, unlike the positive neighbourly relations discussed in the previous section, create a greater desire or commitment to remain in that place if another option were to present itself. For example, despite the positively held relations with the neighbour that paid for the construction of the contention wall and despite the subsequent improvement in her living conditions Alejandra did not particularly demonstrate a strong attachment to the community or to her neighbouring household as a result.

_HS:_ Why is it important for you to live here rather than another part of the city?

_Alejandra:_ Well, maybe I’d like to live in another place but as I don’t have the means and this is what I do have then I’m here. I’ve thought about leaving and if I had the means then maybe I’d go...I’d look for somewhere more comfortable... I’d like to live somewhere where the houses are not like this.

_HS:_ So close together?

_Alejandra:_ Yes, I’d like to live somewhere where the neighbours are not right next to us (Alejandra, Panchito)

Similarly, Carolina stated that despite her strong relationships with her neighbour, and his support in improving the local environment thus far, her dream was to be relocated to a new house away from the river’s edge.

_HS:_ If you were not living here do you feel as though you would lose these friendships and support?

_Carolina:_ I’d build friendships with other people and it would be the same. If I go to another place and find you and you have any dirty clothes I’d clean them and mop or wash. If you cook and I’m the neighbour I’d wash up the plates after the food. That’s how I’d live. I have a reputation of getting on well with people. (Carolina, La Ciénaga)
Here Carolina suggests that she is confident that she would be able to forge new relationships with similar characteristics in any relocation site and friendships alone were not enough of a pull factor for her to turn down the chance to leave should the opportunity to do so arise.

7.4 Concluding Remarks.

The chapter has sought to characterise residents’ sense of place identity, attachment and dependence with reference to the three case study communities. Additionally it has tried to understand how this sense of place impacts upon urban poor strategies and capacities to respond to disasters and severe weather associated with climate change.

Residents saw the aesthetic aspects of the community, as representative of their community and individual identity. Whilst valuing the beauty of the natural environment, they tended to favour and sought to align the community characteristics with those typically associated with the built environment. As a consequence they favoured the increased use of cement and concrete seeing these features as representative of wealth and development. Although they often gained a personal and positive boost from the natural environment they were usually willing to sacrifice these characteristics if it meant that they were not seen to be as poor in the eyes of others. In terms of the adaptive strategies that this encouraged, residents strived to take actions that protect the identities that they wished to portray. Actions tended to involve concreting over shared spaces and footpaths which in the long run could seem at odds with the original values held in relation to the community aesthetics. Furthermore, at times, the ways in which residents carried out such projects actually had negative implications for other parts of the community, such as where cement pathways facilitated increased and more rapid runoff destabilising land, causing localised flooding and landslides.

The chapter suggested that negatively held ideas about community identities and relationships led to a more insular and fragmented community culture but did not necessarily mean that households are passive or apathetic in the face
of climate events. Rather, they continued to strive to enhance their individual sense of place in spite of what is occurring around them. These options often have positive outcomes in terms of people’s capacities to respond to climate events even in cases where it wasn't necessarily the primary aim. These ideas contrast with existing literature which hypothesises that breaks in social ties can lead to withdrawal and reduced action in the face of climate risk (Fresque Baxter and Armitage 2012).

The chapter showed how community dependence was profoundly shaped by the need to be close to employment opportunities particularly in La Ciénaga. This meant that residents were more likely to cope with and tolerate the negative impacts of the severe weather if it meant that they do not lose precious income to public transport expenses.

Additionally, place dependence and attachments were shaped by relationships with family and neighbours. Relationships largely characterised by affect, such as positive relations between family, neighbours and fictive kinships met affective and functional needs on a day to day basis. These relationships encouraged adaptation in the long term, even if this is a slow process, by making people more committed to residing within the same community. Overtime, residents' aspirations and desire to enhance their sense of place had the potential to convert into investments in the house that support adaptation. Functional relationships between neighbours of differing economic capacities had a greater capacity for supporting faster paced localised adaptation such as larger scale construction works but were less common and not all community residents had such support to draw upon.

Overall it can be seen that residents strive to construct and maintain a sense of place in the community that responds to their affective and functional needs as well as their desires to resist stigmatization from within and without the community. Although both of these aspects provided important motives to carry out activities that were supportive of adaptation, the desire to resist negative social dynamics and minimise stigmatization served as a particularly strong catalyst.
Having now established that the sense of place of the urban poor in relation to the house and the community had a range of implications for the adaptive capacities and strategies of the urban poor, the following chapter draws together these findings to answer the key research questions that guided research project and in doing so presents a conclusion to the thesis.
Chapter Eight: Conclusion: Sense of Place and Urban Poor Adaptation in the Dominican Republic.

Introduction

Much research relating to climate change adaptation and adaptive capacity has emphasised the role that tangible assets or material determinants play in building a system’s capacity to adapt to environmental change. By contrast, the role that the less quantifiable, intangible and subjective factors, play in climate change adaptation have so far remained comparatively underrepresented in research and literature (Grothmann and Patt 2005, Frank et al. 2011, Fresque-Baxter and Armitage 2012).

This imbalance is particularly noticeable in research relating to climate change adaptation strategies of low-income inhabitants in urban environments of the global South, where the influence that intangible, subjective factors have, remains comparatively unexplored.

Although an appreciation of the role of objective factors in shaping adaptive capacity is undoubtedly important, a failure to explore the subjective determinants leaves a gap in understanding of what motivates people to take, or not take, action as well as the type of activities that they may value and prioritise. In that sense it does not tell the full adaptation story of urban poor individuals, households and their communities. This is particularly important when considering that research, albeit in other contexts, has demonstrated that subjective features prove equally as important in explaining and encouraging adaptive behaviours (Grothmann and Patt 2005).

This thesis set out to contribute to an emerging focus on the subjective factors that influence adaptation. The research sought to do this by making use of the concept of the sense of place, from environmental psychology, as a lens to explore the ways in which climate impacts are understood, felt and responded to in low-income urban communities within the small island developing state of the Dominican Republic. Small island developing states and urban settings represent two environments which are very much at the forefront of the
climate change debate because of their heightened vulnerability to climate impacts, but where this particular type of research is yet to have been realised. The research has been completed in relation to two scales of analysis: the house, and the community which has helped to emphasise the localised nature of climate change impacts and adaptation so frequently missing in policy approaches to climate change adaptation in the Dominican Republic. In dealing simultaneously with these two particular scales of analysis, it departs from other sense of place studies which have tended to focus solely on one or the other (Lewicka 2010). The research ensured that two of the urban case study communities were within a small urban centre given the tendency, in approaches to climate change vulnerability and adaptation, to focus on large urban centres or capital cities (Moser et al. 2010).

On the basis of the aims and conceptual framework established in Chapter Two, the following questions were developed to guide the research:

1. How are national and local policies framing the sense of place, disaster risk management and climate change adaptation debates?

2. What constitutes a sense of place for individuals, households and communities living in informal urban settlements in the Dominican Republic?

3. Is there a link between the sense of place and the adaptive capacities of the urban poor to face the impacts of disasters associated with climate change?

Research question one was used to guide Chapter Four. It explored how the issues of adaptation and the sense of place are framed in policy terms. The chapter made use of published materials as well as interviews and conversations with government, NGO and INGO officials to explore approaches to DRM and CCA. The aim was to examine the extent to which current approaches to DRM and CCA accommodate a consideration of the sense of place and how it may interact with climate events and shape
residents’ responses to them. Research questions two and three guided the empirical Chapters Six and Seven. Those chapters sought to characterise the urban poor sense of place in the three case study communities, within the context of exposure to climate events in relation to the house and the community. They explored how this sense of place is both impacted by, and shapes responses to weather events. Although initially the focus was on large scale disasters to which the Dominican Republic has been exposed to, the study was ultimately amended to pay equal attention to severe weather events in response to the lived experiences and perceptions of the urban poor residents that participated in the research.

8.1 Main empirical findings.

This section synthesises the empirical findings as answers to the three research questions. The findings are based on the analysis of forty three interviews with residents across three communities (and with three additional interviews with Haitian migrants), a total of around 105 days of participant observation and solicited photography with five participants. These methods were part of a qualitative approach with ethnographic underpinnings.

1. How are national and local policies framing the sense of place, disaster risk management and climate change adaptation debate?

The issue of the sense of place, or other intangible factors that shape urban poor capacities to confront disasters and severe weather do not yet explicitly feature in national and local policies for climate risk management in the Dominican Republic. The issue of climate change, and the importance of adaptation, is still considered to be new in the country. A lack of knowledge, understanding and capacity as to what the range of local urban impacts of climate change are (rather than just the potential for an increased frequency and/or intensity of disasters) and how best to respond to them, in a way that does not only focus on DRM and reducing GHG emissions, are key obstacles preventing a focus on urban adaptation. This is further compounded by a lack of clear responsibility for CCA activities among key institutions. A focus on the
tangible impacts dominates national and local approaches to climate change. Intangible impacts of climate change and disasters, such as those relating to mental health or to psychosocial or cultural factors either do not feature or are not prioritised in existing policies.

Burton et al. (2006) state ‘[a]daptation is in fundamental ways inherently “local”—the direct impacts of climate change are felt locally, and response measures must be tailored to local circumstances (see also Satterthwaite et al. 2009a). Yet the issue of the local has been notably absent from adaptation initiatives that have taken place in the Dominican Republic. Whereas a greater quantity of DRM programs have been implemented in conjunction with at risk communities than those focused on CCA, CCA initiatives, to date, have focused more on evaluating vulnerability in natural systems and those sectors, such as tourism, which are particularly important for economic growth. To date there has been little engagement with communities.

2. What constitutes a sense of place for individuals, households and communities living in informal urban settlements in the Dominican Republic?

Residents’ sense of place is shaped by a range of interconnected relationships between themselves and; their homes, the physical and social aspects of the community and ‘outsiders’, that is to say a range of non-resident actors (see Chapters Six and Seven). These factors are shaped by physical and social interactions with and within places but also through the discursive construction of the locations and the inhabitants of them in public opinion.

The chapters showed that residents’ place dependence was shaped by their need and desire to become homeowners and be close to income earning opportunities. These factors play a central role in dictating where they reside in the urban environment and also, at times, within the community. Homeownership has obvious economic benefits that are incredibly important to low income groups and is valued for that purpose. It also offers the
household greater freedom to modify the built structure to meet their functional needs.

This desire to modify and consolidate the house also formed an important part of the urban poor place dependence and the actions themselves formed part of their place attachment and identity. Residents often sought to upgrade the house and its contents to the highest level possible, depending on the household’s economic capacity, to increase household efficiency and accommodate other family members. They also sought to do this as a means of projecting a certain identity and attempt to ensure that they do not appear to be poor in the eyes of and in comparison to others. Households with a greater economic capacity were able to construct housing and decorate it, both inside and out in a way that projects a desired household or individual identity. For the poorest households whose houses were constructed of iron and wood and are therefore more difficult to embellish externally, this meant adorning the interior of the house with items collected over the years such as curtains, religious artefacts, photos and other items. For these, lowest income groups, attempts to modify the structure itself usually means engaging with, and making use of, paternalistic and clientelistic forms of governance that have typically characterised Dominican politics which, at times, resulted in the provision of housing materials. These physical interactions with the structure enhanced the level of emotional investment in and consequently place attachment that residents feel to the housing structure. When residents were able to project their desired image through the house, whatever the means, it was often a source of great pride and a boost to self-esteem. Although equally the reverse applied with residents expressing a sense of shame where they were not able to do so.

Community, as well as housing appearances similarly shaped the urban poor place identity. Features such as large roads, consolidated houses, businesses, schools, play areas and other infrastructure were frequently considered as achievements and markers of community development, prosperity and progress to be proud of. Although residents often displayed quite a strong appreciation for low density housing and increased coverage of
the natural environment, they often were forced to reconcile this with the fact that some of the realities associated with it, such as unpaved pathways and a lack of roads were also associated with increased poverty and a lack of development in comparison to other areas. Association with this type of environment was considered to be a source of shame.

The social, as well as physical environment also played a central role in residents’ sense of place attachment, dependence and identity. Close and positive relationships with family members and neighbours helped residents to fulfill functional and emotional needs on a day to day basis. In doing so, they contributed to the positive feelings associated with the house and community through the accumulation of memories and life experiences there. Residents also often suggested that they found living in communities known for their positive social characteristics, such as security and increased cohesion between residents, as a source of pride. Similarly, the notion that the community possessed a negative reputation was also considered to be a source of shame or embarrassment, particularly when residents themselves agreed with it. In some contexts it was felt as though the negative stereotyping and stigmatisation of the residents could have material consequences for them in the wider urban environment, particularly in relation to access to employment. Where residents feel as though the dominant image is inaccurate it often ignited protective behaviours manifesting as a sense of resistance against it.

Having characterised the sense of place as being formed of these varied and interconnected relationships the second research question sought to establish how this sense of place interacts with and shapes urban poor adaptive capacities and strategies.

3. Is there a link between the sense of place and the adaptive capacities of the urban poor to face the impacts of disasters associated with climate change?
Chapters Six and Seven show, that the urban poor are constantly seeking to enhance their sense of place in a variety of ways. Sometimes, even within the context of exposure to repeated climate impacts, the actions undertaken to achieve this are envisaged as being of greater importance than undertaking others aimed primarily at adapting to weather events. This was particularly the case in relation to activities that allowed residents to reflect and project a desired individual or household identity. Although the activities that they carry out to do this can sometimes have the resultant impact of supporting adaptation, often they were incidental rather than purposeful. This section will present the ways in which the previously characterised urban poor sense of place dependence, attachment and identity, impacts on adaptation in the three communities in the Dominican Republic.

Residents´ place dependence, when characterised by the need to be closer to income earning opportunities and by the desire and need to be a homeowner, means that they are more likely to tolerate and cope with high exposure to and frequent impacts from environmental risks. These relationships have been described as dysfunctional when the level of risk is great but the relationship to the house means that residents are reluctant to leave. This, it was argued is unfair in this context. Where people have few options about where to live, the need to remain in such areas is understandable.

Emotional attachments to the house are important for encouraging investment in it in ways that support adaptation. When attachment to the housing structure was low or weakened, either because of its deteriorating state or because residents were undergoing a process of ‘detachment’ in preparation for moving away, investment in it in ways that may support adaptation, tended to stall. During this time, however residents often continued to make small but continuous investments in the inside aesthetic appearance of their houses, through décor which often take on greater importance exactly because of the condition of the structure. These actions support the enhancement of some aspects of the sense of place such as the feeling of being ‘at home’ and comfortable in the house.
The desire to modify and consolidate houses in line with household needs and to project a certain individual or household image formed an important part of urban poor place dependence and identity. Often the actions undertaken to enhance these two aspects of the sense of place, such as converting to a cement block house, laying cement flooring even adding a second level, increase household adaptive capacities, even when this was not the main motivating factor. At times, the desire to project a certain place identity was so great that some residents, even in particularly exposed locations prioritized investments in what may be lower cost, aesthetic elements of the house, such as painting, decorating or buying furniture and trinkets than in making some small scale structural amendments that may reduce the impact of weather events. Overtime the cumulative costs of making these aesthetic changes have the potential to amount to the same or more than making small structural amendments to respond directly to climate impacts.

Community appearances somewhat shaped how day to day weather events were felt and understood by residents. The heat, for example, was seen to be less problematic in areas where greater vegetation coverage afforded the residents more shade or where a hillside location meant that residents were exposed to a cooling breeze. Fewer houses, in some parts, was envisaged as being responsible for allowing air to flow better and for meaning that there was less ‘racket’ caused by community life taking place. That said, residents were often forced to reconcile the appreciation for the natural environment and the peace and space that accompanied it, with the fact that they felt as though such features can also contribute to their framing as being poor and less developed in relation to other parts of the same community and in relation to the wider city environment.

Increased vegetation cover meant that informal access routes often became muddy during and after rain. This was inconvenient and made access difficult at best, dangerous at worst. The mud not only damaged or at least muddied shoes but also muddied clothing which residents felt was an indicator of poverty. The lack of access afforded by areas with increased vegetation cover
also meant that residents living away from main roads were unable to consolidate the house at the pace that they may otherwise be able to in a more accessible area. This created divisions between areas of higher and lower quality housing within the same communities because of the increased costs associated with transporting materials to such areas. Residents often favoured cementing over open spaces, paths and any spaces between houses where possible. At times however, such actions had negative outcomes for other parts of the community, such as increasing run off and hillside erosion leading to small landslides and damage to residents’ property.

Community dependence shaped by functional relationships with neighbours supported adaptation when both parties had something to gain from the activity being carried out and where one resident had the economic capacity to finance adaptation projects. In this way the social, community aspect of place dependence differed from that of place attachment. Emotional attachments shaped by positive relationships with neighbours (of similar economic status) and family members tended to convert a commitment to place that is important for encouraging residents to invest in the more costly housing transformations that support longer term adaptation overtime. However they failed to support adaptation of shared spaces in the same way that functional neighbourly relations did. In these emotional, rather than functional relationships, neighbours struggled to overcome issues of collective action and financing.

The research found no evidence to suggest that, in this context, adaptive capacity was negatively impacted by lowered self-esteem caused by negative images of the communities based on the local social dynamics as hypothesised elsewhere (Fresque-Baxter and Armitage 2012). Rather, residents remained pragmatic in the face of social and environmental change. They continue to strive to enhance their household sense of place in spite of the negative social dynamics. In practice this meant that residents made structural and/or aesthetic modifications to the house when resources permitted them to do so often although not always in ways that support adaptation.
Based on the research findings and approach the research contributes to knowledge in several key ways which will be outlined in the following section.

8.2 Contributions to knowledge

The research outcomes suggest the following three contributions to knowledge.

Firstly, this research builds on the literature focusing on the subjective drivers of adaptation and adaptive capacities by exploring ways in which the sense of place motivates and limits adaptive behaviour in urban poor communities. The idea that the sense of place may have implications for adaptive capacities and strategies is not necessarily new in and of itself having also relatively recently been suggested by the likes of Fresque-Baxter and Armitage (2012). Rather, the scholarly contributions made by this research relate to real world exploration of these phenomena through a contextual case study. It was argued that case study research is fundamental for the advancement of the debate given the diversity and context specific nature of climate change impacts and experiences the world over. As such, the contextual contribution relates to the focus on climate change adaptation and the sense of place in the context of SIDS and low income urban communities within the global South. This research has argued (as has that of others), that the urban environment in the global South should be placed at the forefront of climate change adaptation discussions and research owing to its increasing vulnerability to climate impacts. It also argued that there is great variation even within similar case study contexts so while some sense of place and climate change research has been carried out in SIDS, an understanding of the heterogeneity that exists between islands is important to enrich the debate.

Secondly, the research offers a methodological contribution to knowledge by developing ways of exploring the sense of place as a proxy for understanding adaptive capacities. Although there is a wealth of information and guidance in the environmental psychology literature about what the range of proxies for
notions of place attachment, dependence and identity may be (see Altman and Low 1992, Hidalgo and Hernández 2001), the infancy of the sense of place and adaptive capacity approach means that it suffers from a lack of debate and development relating to the ways in which to explore these dimensions as potential proxies of adaptive capacity. In adopting a qualitative approach, this research has developed methods for exploring how elements of the sense of place and adaptive capacities interrelate including thematic areas to explore with residents that uncover how they envisage the two phenomena to interact.

Thirdly the research contributes to existing concerns and trends which show that there is often a disparity between how the climate change threat is framed at the policy level and the lived realities of the urban poor (e.g. see Moser et al. 2010). The research has shown that in the Dominican Republic, climate change is largely viewed as posing a threat to rural and natural systems as well as tourism yet this research and that of others demonstrates that urban poor communities are already noticing, feeling and responding to climate change impacts. Despite this, the research found that weather impacts are being felt and responded to by urban poor communities, yet the implications of climate change and the adaptation options for these groups do not feature in the policy debate. In so far as the urban environment is considered in climate change policy, the threat to it is framed in term of large scale disasters to which the country is exposed and which have typically been considered the country’s primary concern. This focus contrasted with the experiences of the residents living in the communities. While residents could often talk at great length about disaster impacts and expressed fear of the potential that such events have to cause loss of life and extensive damage, they overwhelmingly expressed that slower and more incremental weather events, such as rain and increased heat, were those to which they were responding on a day to day basis.

These contributions highlight two main theoretical and policy implications that will be discussed below.
8.3 Theoretical and policy implications.

*Sense of place and climate change adaptation literature and policy requires expansion to consider the range of ways in which the two phenomena may interact in similar and different contexts.*

The research shows that in this context, the sense of place is dynamic, representing both a stimulus for and hindrance to adaptation in different ways. Exiting literature that makes explicit links between the sense of place and climate change has been more heavily weighted towards an impact focused perspective which is unidirectional, in that it explores the negative impacts that climate change is having on the sense of place of affected populations. This research suggested that this focus has, in part, been shaped by such research having typically been carried out in areas which, while inhabited by often incredibly resilient populations who have found ways of coping with and adjusting to environmental shocks and changes for generations (see Adger et al. 2011), are arguably approaching their adaptation limits. The options for incremental adaptation, to maintain the traditional lifestyles and livelihoods are diminishing. In such contexts, the adaptation options that remain are situated more towards the transformational end of the adaptation spectrum. After all, as Adger et al. (2011) point out, at a certain point there is little that can be done, for example on a small island, to adapt to incremental sea level rise. The necessary transformations such as relocation and livelihood adjustments can be hugely disruptive to the sense of place when peoples' identities and cultures are so heavily intertwined with the physical but increasingly uninhabitable landscape. So while this research and that completed in other contexts suggests that a strong sense of place can increase people's willingness to undertake place protective behaviours when faced with an environmental threat or threats (see also Stedman 2001), this needs to be accompanied by options for adaptation that are not only characterised as transformational. Where these are not present, the sense of place can understandably almost convert into a source of vulnerability for the affected populations. It is this research which has, to date, shaped the international policy debate as it relates to the sense of place and climate change.
Yet climate change experiences and impacts are incredibly varied and both location and context specific. So too are the subsequent adaptation options and opportunities available to different groups as well as the relationships to the land. The use of the land and the relationship between the urban poor and the ecological landscape is understandably different from that of indigenous Inuit communities or those inhabiting atolls, as are the adaptation options available to them. The urban poor in the case study communities were continually modifying their sense of place. Sometimes as a result of, yet sometimes in spite of the changing environmental conditions and the environmental impacts they face. At times, these modifications were considered or acted as successful adaptations; at others they were valued for different purposes. This suggests that in this context the sense of place is neither uniquely positive nor negative nor does it act only as a source of vulnerability or resilience. It is also unlikely to be static. Rather it is evolving and through its impacts on people’s desires, values and aspirations can be a stimulus for action and a source of resistance as well a distraction and stumbling block for adaptation. Evidently, the resilience gained from the sense of place is not sufficient on its own to confront all of the climate change challenges faced by urban poor populations but it does nonetheless form an important basis for understanding household and community responses and targeting and developing locally valued and context appropriate adaptation interventions.

For example, people who value remaining in a community because of; their local economic and social ties, because of the value placed on the aesthetic qualities of the location or because of the memories intertwined with a house or community, may have greater support for strategies that allow them to remain in and develop their current site than for those which involve relocation. It also suggests that should relocation be a necessary response, urban poor input in the process, including the design and location of the relocation site, as well as support if necessary in encouraging a process of detachment from the current area and attachment to the new one, is also important if such actions are going to be successful and to minimise the
impact of such transformational adaptation on the sense of place. The importance lies in understanding the specific sense of place dynamics in similar and different contexts, in finding ways to enhance the aspects which stimulate climate change adaptation, or find ways to ensure that the impacts of adaptation on the sense of place are minimised.

*The climate change realities of urban poor individuals and groups must be incorporated into policy approaches to climate change and adaptation.*

In the Dominican Republic and indeed beyond, the realities of climate change experiences relating to the types of weather events to which they most frequently respond are not reflected in national climate change policy. Policy focuses mainly on largescale disasters prioritising disaster relief and response over supporting the adaptive responses or affected groups. By contrast, residents in the urban poor communities are responding to slower and more incremental impacts of weather events which tend to be overlooked by local and national institutions. Although there was a lack of localised and accessible climate change information in relation to the urban environments, which was seen as a hindrance to effective adaptation planning among local and national institutions, residents in the communities were aware of the weather, how it impacts themselves and others, as well as changes and variations in the climate overtime. These provide valuable insights and starting points for adaptation planning but can only be accessed by engaging with communities and listening to their climate change experiences.

This does not signify the need for a lesser focus on disasters which remains incredibly important given their potential for widespread damage when they do occur. Rather, it implies the need for a more holistic approach which reflects the everyday climate experiences of the residents themselves as well as the large scale threats to which they may also be exposed. Participatory approaches to climate change adaptation provide an important means of increasing the dialogue between urban poor communities and authorities and
ensuring that these experiences can be heard and that local adaptation planning is tailored to local needs (see Moser et al. 2010).

8.4 Limitations.

In Chapter Three the research discussed how my positionality as a woman afforded me a certain level of closeness with female residents of the case study communities but also made access to male residents more challenging and was a contributing factor to the greater female bias among my research participants. This was further compounded by male community members being more prone to having full time employment and therefore being out of the communities during daylight hours which was when I spent time there. Although interviews suggested little by way of difference in emotional investment in houses, or the desire to use it as a means of projecting certain identities between genders, it did reveal differences in perceived responsibilities when it comes to certain aspects of homemaking. While female members of the household often took charge of the décor and inside of the house, responsibility for the modifications to the physical structure were usually the domain of the male. In situations where the poor condition of the house and materials means that severe weather was felt inside of the structure, emotional reactions were actually often stronger among males who expressed feelings of powerlessness and incompetence when such events occurred. A greater gender balance would have allowed for these aspects to be interrogated in greater detail.

The second limitation relates to the incorporation of more Haitian voices in the research process. Chapter Five discussed the strong anti-Haitian sentiment present in Dominican society. This is something which I regularly witnessed first-hand whilst carrying out the research and which made access to Haitian residents within the communities particularly difficult. The chapter noted that some Dominico-Haitians tended to be more imbedded in communities and possessed greater social ties with local Dominican residents. However it stated that the same cannot be said for many of the Haitian migrant workers and long term undocumented residents who often remained socially excluded.
and usually lived with some of the greatest exposure to weather events. So while a large section of the research focused on the importance placed by the urban poor on the nurturing of positive neighbourly relations, which at times had benefits for supporting adaptation, these relationships were usually off limits to Haitian migrants unless they lived among groups of other Haitians. Incorporating a greater quantity of Haitian voices into the research would have the potential to uncover the relationships that this group form and whether or not they supported adaptation in similar or different ways. Additionally, the interviews and conversations that were held with this group, revealed that they felt as though their irregular immigration status meant that they were far more dependent on living wherever work opportunities dictated. Consequently they often expressed a reluctance to form affective attachments with places. The findings suggested not only a different sense of place between Dominicans and Haitians but also between different groups of Haitian people. More time spent with these groups and the greater representation of Haitians in the research process would have allowed these notions to be interrogated in greater depth and triangulated using participant observation.

8.5 Final comments and future research

The introductory chapter of this thesis identified the lack of research into the subjective determinants of adaptation and adaptive capacities in low-income urban settings within the context of cities in the global South. It suggested that an exploration of the sense of place provides an important way to obtain a more rounded understanding of the subjective determinants of urban poor adaptation and a means of highlighting the urban poor climate change experiences which are so often left out of urban adaptation planning initiatives (see Moser et al. 2010).

These issues are as, if not more relevant now than ever. The Dominican Republic possesses high rates of urbanisation and heightened vulnerability to climate change impacts. This, within a global context in which the international agreement to limit the increase in global temperatures to well below the two
degree threshold thought to be particularly dangerous (especially to developing countries (Rojelj et al. 2015)), appears ambitious at best, unattainable at worst (see Jordan et al. 2013, Rojelj et al. 2016). This suggests that the need for and importance of adaptation is only going to increase in coming years. A notion which appears to have been internationally recognised given commitments as set out in the Paris Agreement to significantly increase funding for adaptation for developing countries. Within this context there is the need to better understand the range of objective and subjective factors that shape, hinder and promote adaptation, particularly in the urban environments of developing countries where population growth and climate change impacts intersect profoundly but where capacities to cope with impacts is significantly reduced.

The aim is not to highlight the need for a subjective over objective approach to adaptation. After all, objective determinants will always ultimately determine how much adaptation can be carried out. Rather the research suggests the need for the incorporation of a more holistic approach that considers people’s objective capacities to carry out adaptation but also explores the subjective factors that may be guiding and shaping those decision making processes to understand locally held priorities and values. This research indicates that the sense of place can be a particularly useful tool for doing this, exploring not how residents’ relationships to and within places impact on the assessments that they make about responding to climate impacts.

Based on this discussion it is suggested that future research priorities should include a continued emphasis on the stories of urban residents both in terms of their climate change experiences and also in terms of the subjective place related values guiding their adaptation decisions and actions. This is particularly important for ensuring the focus of the adaptation debate aligns with the realities and lived experiences of the urban poor.

This research highlighted the relationship between the sense of place and climate change adaptation in urban communities. This particular research focused on three case study cities in two different cities in the Dominican
Republic. Yet the research has maintained that climate change experiences and potentially the sense of place are context specific suggesting that there is scope to extend this into different urban poor contexts. Extending this research into other cities in the global South would be particularly beneficial given the increasing threat posed by climate change to urban areas and to help identify trends and differences among a range of contexts. Adding a comparative element, between cities of the global South may offer different and interesting perspectives whilst contributing to the development of diverse and rich debate on the role of subjective place related values in climate change adaptation.

A major finding of this research was that the sense of place of the urban poor in the three case study communities is significantly shaped by notions of images and appearance as well as locally held values and social relationships. These factors however are presumably temporal and open even prone to change over time as fashions and tastes change and values and desires adjust to age and life trajectories. This suggests that a longitudinal study exploring the evolving sense of place of the urban poor at different life stages and its differential impacts on adaptive capacities among age groups would add an interesting dimension to future research into the subjective determinants of adaptive capacity in urban poor settings.
References


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UNFCCC. (2005) Climate Change and Small Island Developing States. UNFCC Bonn Germany.


# Appendix One: List of semi-structured interviews.

## Residents

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<td>31</td>
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<td>Single mother of two Hotel cleaner Half Haitian, half Dominican Cement block house with localised flood risk Homeowner</td>
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<td>20.06.14 27.08.14</td>
<td>Resident, Panchito</td>
<td>60</td>
<td>F</td>
<td>Head of household Cleaner Member of Junta de Vecinos Low quality house Less accessible part of community Homeowner</td>
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<td>Father of three Member of Junta de Vecinos Security guard Civil defence volunteer Precarious house Homeowner</td>
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<td>M</td>
<td>Security guard President of Junta de Vecinos. Cement block house unfinished and in disrepair Homeowner</td>
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<td></td>
<td>Jimena</td>
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<td>Housewife Widow of barrio founder Vice president of junta Cement block house Homeowner</td>
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<td>Gabriella</td>
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<td>Housewife Mother of three Very precarious hillside house Homeowner</td>
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<td>Teacher Homeowner Consolidated house</td>
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<td>Daniela</td>
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<td>11</td>
<td>Joanna</td>
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<tr>
<td>12</td>
<td>Samuel and Andrea</td>
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<td>Retired, Homeowners, Consolidated house on main street in centre of the barrio, Members of Junta de Vecinos</td>
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<tr>
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<td>Mother of three, Homeowner, Small shop and hair salon in house, Low quality house</td>
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<td>Mia</td>
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<td>Mother of one, Living in parental home which is owned, House made from block but in flooding area</td>
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<td>Living with son and his family, Unemployed, Homeowners, Consolidated house</td>
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<td>Julieta</td>
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<td>Student living at home with parents who are homeowners, About to go to university in the capital, Consolidated house in disrepair.</td>
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Municipal leaders and other stakeholders in DRM and CCA

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<td>Also resident of Panchito</td>
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<td>Health sector, Samaná</td>
<td>Medical Assistant Barrio Wilmore</td>
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<td>5</td>
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<td>Dr. Ramon</td>
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<td>Ministry for Public Health</td>
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<td>7</td>
<td>Leonald</td>
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<td>Municipal Deputy, Samaná</td>
<td>Community Affairs</td>
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<td>8</td>
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Specialist interviews

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<td>Climación/ IDDI, Santo Domingo</td>
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<td>Oxfam/Santo Domingo</td>
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## Appendix Two: Visits and events

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<td>Las Colinas I and II, San Pedro de Macorís</td>
<td>Surveying communities, transect walks, Interviews</td>
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<tr>
<td>4</td>
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<td>Villa Progresso, San Pedro de Macorís</td>
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<td>Universidad Autónoma de Santo Domingo</td>
<td>Conference Workshop on Sustainable Development in Santo Domingo Floodplains</td>
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<tr>
<td>6</td>
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<td>Universidad Autónoma de Santo Domingo</td>
<td>Conference Workshop on Sustainable Development in Santo Domingo Floodplains</td>
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<td>7</td>
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<td>Resident</td>
<td>Samaná</td>
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<td>Samaná</td>
<td>Visit Panchito, Wilmore, Zaputica, Villa Salma</td>
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<td>Samaná</td>
<td>Introductory meeting</td>
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<td>Transect Walk and Focus Group</td>
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<td>Speech by Senator Prin Pujals Nolasco of the Partido de la Liberación Dominicana</td>
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<td>14</td>
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<td>Focus group</td>
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<tr>
<td>15</td>
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## Appendix Three: Auto-photography participants

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<td>33</td>
<td>M</td>
<td>Lives with wife and three young children.</td>
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<tr>
<td>4/5</td>
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<td>58</td>
<td>F</td>
<td>Pastor Unemployed Mechanic</td>
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<tr>
<td></td>
<td>Enrique</td>
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</table>
### Appendix Four: Glossary of foreign terms

<table>
<thead>
<tr>
<th>Term</th>
<th>English Translation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ayuda</td>
<td>Help</td>
</tr>
<tr>
<td>Barrio</td>
<td>Community/neighbourhood</td>
</tr>
<tr>
<td>Cañada</td>
<td>Ravine/open sewers.</td>
</tr>
<tr>
<td>Colmado</td>
<td>Shop/Convenience store</td>
</tr>
<tr>
<td>Comadre</td>
<td>Godmother/close female friend</td>
</tr>
<tr>
<td>Junta de Vecinos</td>
<td>Community association</td>
</tr>
<tr>
<td>La Ciénaga</td>
<td>Swamp</td>
</tr>
<tr>
<td>Los de Abajo</td>
<td>Those from below [the bridge]</td>
</tr>
<tr>
<td>Los de Arriba</td>
<td>Those from above [the bridge]</td>
</tr>
<tr>
<td>Machismo</td>
<td>A strong sense of masculine pride</td>
</tr>
<tr>
<td>Motoconcho</td>
<td>Motorcycle taxi.</td>
</tr>
<tr>
<td>Sacrificio</td>
<td>Sacrifice.</td>
</tr>
<tr>
<td>Tarjeta Solidaridad</td>
<td>Solidarity Card</td>
</tr>
<tr>
<td>Tranquilo</td>
<td>Calm, quiet, peaceful.</td>
</tr>
</tbody>
</table>
# Appendix Five: Policies for CRM in the Dominican Republic

## Policies for Disaster Risk Management

<table>
<thead>
<tr>
<th>Implementing Agency and Project Name</th>
<th>Objectives</th>
<th>Funding Agency</th>
<th>Type of Project</th>
<th>Geographic focus</th>
</tr>
</thead>
</table>
| Oxfam and IDDI                       | Reduce community vulnerabilities to disasters.  
Strengthen local capacities  
Establish tools and increase disaster awareness, | ECHO, Oxfam, IDDI (128,000 Euros) | Participatory Capacity Building | Four riverside communities in Santo Domingo |
| Plan International                   | Facilitate work with educational community.  
Educate children and young people on actions to take before during and after a disaster.  
Information dissemination and awareness rising  
Strengthening community work for DRR. | 2,200 Euros per camp | Capacity Building  
Awareness Raising  
Educational | Rural communities in Barahona and Pedernales |
| Ponte Alerta (Be Alert) Summer School Camp for Children on Risk Management.  
Throughout July 2010. School summer holidays. | | | |
| Red Cross (Spain and Dominican Republic)  
Community-based mapping and map socialization for risk management.  
2009-2011 | To strengthen disaster preparedness at all levels using a participatory methodology. | No Info. Available | Participatory Capacity Building | Urban, Peri-urban and Rural communities in three municipalities; Santiago, San Francisco de Jacagüa, and Tamboril |
| ACPP/IDAC Civil Defence  
Dominican Red Cross, fire departments, public health  
Municipal Risk | Facilitate technical and operational coordination role of the municipal government  
Enhance the | | Communities located on the Soco River bank in the municipalities of Ramón Santana and San Pedro de Macorís |
<table>
<thead>
<tr>
<th>Implementing Agency and Project Name</th>
<th>Objectives</th>
<th>Funding Agency</th>
<th>Type of Project</th>
<th>Geographic focus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management Unity</td>
<td>Effectiveness and efficiency of the coordinated management of human, technical and logistical resources in disaster prevention, mitigation and response.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>June –November 2010</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plan UK, Oxfam, Habitat for Humanity</td>
<td>Information management during disasters at local provincial and national levels. Engage local government in promoting resilient and inclusive communities. Make schools safer and better prepared for disaster response. Ensure that communities have a better understanding of disaster risks, and are better prepared and able to respond to risks while also paying attention to groups with specific vulnerabilities</td>
<td>950,000 Euros made available by the European Commission.</td>
<td>Capacity building</td>
<td>Azua Province</td>
</tr>
<tr>
<td>Warning, informing and including: Strengthening inclusive DRR in the Dominican Republic 2012 - 2014</td>
<td></td>
<td></td>
<td>Awareness raising</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Disaster preparedness</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Inclusion</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Information management</td>
<td></td>
</tr>
<tr>
<td>Oxfam/IDDI: Urban DRR in the Caribbean region.</td>
<td>Reducing vulnerabilities in areas with high exposure to disaster events.</td>
<td>European Commission</td>
<td>Participatory methods</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Awareness raising</td>
<td></td>
</tr>
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<td></td>
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<td></td>
</tr>
<tr>
<td>Red Cross (Spain)</td>
<td>Promotion of a</td>
<td>AECID</td>
<td>Capacity</td>
<td>130 communities in 7</td>
</tr>
<tr>
<td></td>
<td>Voluntary做出</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Implementing Agency and Project Name</td>
<td>Objectives</td>
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</tr>
<tr>
<td>and Dominican Republic Preparation for DRMIN the Dominican Republic. 2011-2014</td>
<td>culture of risk management.</td>
<td>Red Cross</td>
<td>building</td>
<td>provinces in the south of the Dominican Republic: Azua, San José de Ocoa, San Juan, Elías Piña, Barahona, Bahoruco and Independencia.</td>
</tr>
<tr>
<td>Red Cross (Canada) Project First Response 2010-2013</td>
<td>To strengthen disaster response capacities</td>
<td>Government of Canada through Canadian International Development Agency</td>
<td>Institutional and community capacity building with focus on response and recovery</td>
<td>Several provinces: La Romana, Higuey, San Pedro de Macorís, Distrito Nacional, Peravia, San Cristóbal and Independencia</td>
</tr>
</tbody>
</table>

Source: Author’s own elaboration based on search of organisation projects.

**Policies for Climate Change Adaptation.**

<table>
<thead>
<tr>
<th>Implementing Agency and Project Name</th>
<th>Objectives</th>
<th>Funding Agency</th>
<th>Type of Project</th>
<th>Geographic focus</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNDP Capacity Development for Policy Makers: Addressing Climate Change in Key Sectors. 2008-2011</td>
<td>Assess and present investment and financial flows to address climate change in key sectors</td>
<td>$7.7 Million U.N Foundation, Governments of Norway, Finland and Sweden.</td>
<td>Capacity Building Knowledge communication</td>
<td>20 countries globally including the Dominican Republic.</td>
</tr>
<tr>
<td>UNDP The Climate Policy 2012</td>
<td>Extension of above project</td>
<td>$3.3 million UNDP, Government of Spain and the UK</td>
<td>Capacity Building Technical Assistance</td>
<td>Latin America and Caribbean Region</td>
</tr>
<tr>
<td>Implementing Agency and Project Name</td>
<td>Objectives</td>
<td>Funding Agency</td>
<td>Type of Project</td>
<td>Geographic focus</td>
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</tr>
<tr>
<td>Centre for International Forestry Research (CIFOR-CGIAR) Research and Agriculture and Alimentary National Institution of Research, (INIA-Spain), Tropical Agricultural Research and Higher Education Center (CATIE), Polytechnic University of Madrid (UPM) and Research centers of the INIAs systems of Iberoamerica. Co-operative project on Mitigation and Adaptation to Climate Change in Sustainable Forest Management in Ibero-América. (MIA project) 2009-2011</td>
<td>Generate information and knowledge, and strengthen research institute capacity in relation to CCA and mitigation in the forestry sector.</td>
<td>Government of Spain</td>
<td>Capacity Building Research Knowledge Communication</td>
<td>Latin America including the Dominican Republic and Cuba.</td>
</tr>
<tr>
<td>Peace Corps renewable Energy and Climate Change Initiative.</td>
<td>Increase awareness and knowledge of climate change, energy efficiency, renewable energy.</td>
<td>United States Department of State</td>
<td>Community based adaptation Knowledge Communication Energy</td>
<td>Eleven Latin American and Caribbean countries including Dominican Republic</td>
</tr>
<tr>
<td>Implementing Agency and Project Name</td>
<td>Objectives</td>
<td>Funding Agency</td>
<td>Type of Project</td>
<td>Geographic focus</td>
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<tr>
<td>-------------------------------------</td>
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</tr>
<tr>
<td>adaptation and mitigation in municipal, educational and community environments.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Support communities in leading energy related CCA projects.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Red Cross and Red Crescent Preparedness for Climate Change - (2006-2011)</td>
<td>Supporting National Societies to assess changing climate risks and prepare action plans to address them and the potential implications for their programs.</td>
<td>Government of the Netherlands</td>
<td>Knowledge Communication Capacity Building</td>
<td>Multiple countries around the world.</td>
</tr>
<tr>
<td>Caribsave Climate Change Risk Atlas (2009-2011)</td>
<td>Provide assistance to assess and manage the risks associated with the changing climate to governments, the tourism sector and communities.</td>
<td>UK Department for International Development (DFID/UKaid) and the Australian Agency for International Development (AusAID).</td>
<td>Research Capacity building</td>
<td>Dominican Republic</td>
</tr>
<tr>
<td>UNDP Regional Reducing Emissions from Deforestation and Degradation (REDD) Program in Central America and the Dominican Republic 2010-October 2016.</td>
<td>Provide support in managing and protecting forests to help the mitigate and adapt to the effects of climate change.</td>
<td>Federal Republic of Germany through the Federal Ministry for Economic Cooperation and Development (BMZ)</td>
<td>Sustainable compensation schemes to reduce CO2 emissions from deforestation and forest degradation.</td>
<td>Dominican Republic and Central America</td>
</tr>
<tr>
<td>UNDP with the support of various ministries, such as the Dominican Ministry for Economy, Planning and Development (MEPyD) Social Cabinet; Single</td>
<td>Integrate the links between poverty, environment and CCA into planning and development processes and poverty</td>
<td>United Nations Environment Program (UNEP)</td>
<td>Capacity Building Multi sectoral with specific focus on droughts, floods, deforestation land</td>
<td>Rural, western border areas.</td>
</tr>
<tr>
<td>Implementing Agency and Project Name</td>
<td>Objectives</td>
<td>Funding Agency</td>
<td>Type of Project</td>
<td>Geographic focus</td>
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</tr>
<tr>
<td>System of Beneficiaries (SIUBEN); and the Ministry of Environment and Natural Resources. National Program for the integration of Poverty Variables, Environment and Climate Change in Development Planning and the Reduction of Vulnerability of Poor Rural Households in the Dominican Republic, 2012-2016.</td>
<td>reduction strategies. Reduce vulnerability of poor rural households and increase their resilience to climatic shocks through the integration of social protection policies oriented towards poverty reduction with policies aimed at CCA and risk management.</td>
<td>USAID</td>
<td>Multisectoral</td>
<td>Regional</td>
</tr>
<tr>
<td>Central America Integration System (Sistema de la Integración Centroamericana SICA) Central American Commission for Environment and Development (Comisión Centroamericana de Ambiente y Desarrollo – CCAD Regional Strategy on Climate Change 2010</td>
<td>Compile and summarise climatic and vulnerability information. Propose actions to be carried out by the governments, private sector and civil society.</td>
<td>No information</td>
<td>Multi sectoral</td>
<td>Regional</td>
</tr>
<tr>
<td>USAID Country Development Cooperation Strategy 2014-2018</td>
<td>Develop strategies to improve citizen security to promote economic growth, increasing people’s resilience to Climate change and the advancement of an AIDS free generation.</td>
<td>USAID</td>
<td>Multisectoral</td>
<td>The ‘corridor’ connecting Santo Domingo to Puerto Plata through Santiago. Additional focus on two towns considered important for tourism and thus economic development: Punta Cana and Las Terrenas.</td>
</tr>
<tr>
<td>Implementing Agency and Project Name</td>
<td>Objectives</td>
<td>Funding Agency</td>
<td>Type of Project</td>
<td>Geographic focus</td>
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</tr>
<tr>
<td>USAID The Planning for Climate Adaptation Program</td>
<td>Increase municipal resilience by supporting officials, CBOs, the private sector and other stakeholders in mainstreaming climate change into participatory urban planning.</td>
<td>International City./County Management Association (ICMA) The Technologica l Institute of Santo Domingo (INTEC), The Dominican Federation of Municipalitie s (FEDOMU) and ICF International.</td>
<td>Capacity building</td>
<td>Santo Domingo, Santiago, San Pedro de Macorís and Las Terrenas.</td>
</tr>
</tbody>
</table>

Source: Author’s own elaboration based on adaptation of Medeiros et al. (2011) and search of organisation projects.
Appendix Six: Sample interview questions, residents.

Interview Prompt Sheet/Examples of questions typically asked.

**Demographic Data:**

Name:   Age:   Gender:

Nationality/Birthplace:

Length of residence (PA):

Location of residence:

Employment?:

Home owner/renter?:

Legal title: (y) / (n)

**Social ties**

- Do you have family?
- Do they live in this barrio or nearby?
- Who would you say you spend most of your time with?
- When you think of who your closest friends are, where do they live?
- Can you think of times that people in this barrio have gotten together for a social event? Can you tell me about that? Does this type of event happen often?

**The community**

- Please describe the barrio, i.e. What are the good or not so good things about living here?
- Is there anything that is distinctive about this barrio? and the community?
- Can you describe the type of people that live in this barrio?
- Do you feel as though you are this type of person? (do you feel a sense of togetherness?)
- Does the type of person you describe differ in any way from other people in the city?
- Would you say that there is a type of identity in this barrio – can you describe it?
- Do you feel a sense of belonging in this neighbourhood? Why/why not?
- How does it make you feel to say that you live in this barrio or part of the city? Why?
- Describe the positive benefits /negative aspects to you and your lifestyle of living here?
- Is it important for you to live here rather than somewhere else in the country or in the city? Why?
- Can you tell me anything about the history of the barrio?
- Has the barrio has changed at all (physically and/or socially) over the time that you have lived here? How? What are your opinions of this? Has anything remained the same?
- Are any parts of the barrio special or important to you? Why?
- If you were to leave the barrio would you be sorry to leave? Why?

The house

- Who built your house?
- Has it been modified by yourself or your family, how?
- How do you feel about these changes?
- What are the positive and negative things about your house?
- Do you plan to change it in anyway? How? Why?
- What does the word home mean to you?
When you think of home, where do you think of and what do you feel?

Climate impacts

- How would you describe the weather here?
- Does the weather cause you any problems? What type is the most problematic? How/why?
- How often does this happen?
- What do you do when this happens? What actions do you take to prevent these events from impacting you and your home?
- How does the weather impact the community? And your house? Your family?
- How does this make you feel? Do events like this impact your feelings towards the community/home or the meanings that you described earlier? How?

Disasters

- Have you experienced a disaster or extreme weather event while living here? Did you live here when disaster X happened? (If no probe for what events are the most problematic)
- Can you tell me about your experiences?
- What are the main impacts and disruptions caused by these event to;
  - You and your family (i.e. your ability to work and other parts of your lifestyle such as spending time with your friends and family (or activities described earlier)
  - Your home, the barrio, the community?
- Do these events affect relations between residents in anyway?
- Would you say the barrio changed in anyway after a disaster event occurs? Or did it change after disaster X Please describe?
- What actions do you take to prevent these events from impacting you and your home?
• If you know a storm (or disaster) is coming what do you do to get ready for it?
• Do you require/receive assistance in this?
  o What type?
  o From whom? from e.g. family, friends, NGO’s, government assistance)
• What do you normally do when the bad weather arrives?
  o Do you require/receive assistance in this?
  o What type?
  o From whom? from e.g. family, friends, NGO’s, government assistance)
• After the storm (or disaster) what do you do? Then what would you do after this?
  o Do you require/receive assistance in this?
  o What type?
  o From whom? from e.g. family, friends, NGO’s, government assistance)
• Have you assisted anyone else in carrying out these actions?
• What makes the things that you have to do before, during and after a storm more difficult for you? How, why, what are the outcomes of this?
• Was this support (or lack of support) that you have described what you would expect/have expected? – Why/Why not?
• How do you overcome/compensate for this?
• How could these actions be improved? (i.e. what type of support is necessary?)
• Do you think that disasters affect some people worse than others? Who and why?
• What factors are influential in your decisions to continue living here despite the impacts of these events?
• Are there any particular people that you rely on for support? Who?
• Do you ever think of leaving? Why/why not? What/who stops you?
Personal information

- What hopes do you have for your future?
- How will you realise these hopes?