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UNIVERSITY OF SOUTHAMPTON

FACULTY OF SOCIAL, HUMAN AND MATHEMATICAL SCIENCES

GEOGRAPHY AND ENVIRONMENT

**Migration and Adaptation: The impact of migration on women's
adaptive capacity in the Mahanadi Delta, India**

by

Giorgia Prati

Thesis for the degree of Doctor of Philosophy

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UNIVERSITY OF SOUTHAMPTON

Abstract

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The climate-migration debate has an overwhelming focus on the implications of environmental stressors for migration decision-making. A growing consensus among migration scholars points to a multi-causal relationship where environmental factors interact with others in complex and often unpredictable ways. There is a less explored, yet expanding, discussion on the role of migration as adaptation strategy. Increasing attention has been given to investigating the impact of migration on migrant-sending communities' and households' capacity to cope with environmental stresses and shocks. The gender dimension of the migration-adaptation relationship is, however, largely overlooked. Empirical studies that explore the gender differentiated effects of migration on adaptive capacity are lacking, and understandings of the migration and environment linkages at intra-household level are limited. Using the hazard-prone areas of the Mahanadi delta, in India, as a case study, this research seeks to address this gap by exploring the relationship between migration, gender and adaptive capacity.

This study investigates how migration shapes and power dynamics and how this, in turn, affects women's adaptive capacity to climate change in migrant-sending communities and households. In contrast to traditional binary approaches, it explores gender through the lens of *intersectionality* to unpack the multiple dimensions of power and contextualise the analysis in the broader spectrum of social identities and relations of caste, age, marital status and class. The primary methods of data collection were in-depth interviews, focus group

discussions and gender-sensitive participatory rural appraisal (PRA). The combination of these tools delivered gender disaggregated understandings of adaptive capacity which are otherwise confined to homogenised analysis.

Findings show that men and women face different everyday constraints that shape their views on the determinants, needs and priorities to enhance their well-being and capacity to adapt to climatic shocks and stressors. The analysis of power and social structures highlights some of the root causes of this differentiation and its dynamic nature. The processes shaping vulnerability, power and inequality are continuously renegotiated through migration through changes in household structures, roles and responsibilities. The study in fact points out that migration has different implications for adaptive capacity by influencing its barriers and opportunities with mixed effects among men and women in the areas of origin, depending on their caste, age, class and position in the household.

This thesis argues that the 'migration as adaptation' discussions should put a greater emphasis on socially differentiated impacts, beyond economic and assets-driven assessments and with attention to intra-household dynamics. Moreover, this study highlights the need to develop approaches to the analysis of adaptive capacity able to capture less tangible aspects related power, inequality and subjective well-being. It finally underscores the importance of strengthening coherence and collaboration across the fields of migration, adaptation and gender in both academic and policy discourses.

Table of Contents

LIST OF TABLES	VI
LIST OF FIGURES	VI
LIST OF PICTURES	VI
DECLARATION OF AUTHORSHIP	VII
ACKNOWLEDGMENTS	VIII
CHAPTER 1. INTRODUCTION	11
1.1 MIGRATION AND ADAPTATION THROUGH THE LENSES OF GENDER	11
1.2 WHY IT MATTERS?	12
1.3 THE MAHANADI DELTA AS CASE STUDY	13
1.4 RESEARCH AIM AND OBJECTIVES	14
1.5 THESIS OUTLINE	15
CHAPTER 2. LITERATURE REVIEW	18
2.1 INTRODUCTION	18
2.2 THE ROLE OF ADAPTATION IN SHAPING ENVIRONMENTAL HAZARD OUTCOMES	18
2.2.1 LINKS BETWEEN ADAPTATION AND ADAPTIVE CAPACITY	20
2.2.2 AUTONOMOUS AND PLANNED ADAPTATION	22
2.2.3 GENERIC AND SPECIFIC ADAPTIVE CAPACITY	23
2.2.4 FROM INCOME POVERTY TO MULTIDIMENSIONAL WELLBEING	26
2.2.5 TRANSFORMATIVE VS. INCREMENTAL ADAPTATION: WHOSE ADAPTATION?	28
2.2.6 MEASURING DIFFERENTIATED ADAPTIVE CAPACITY	29
2.3 THE CLIMATE-MIGRATION DEBATE	33
2.3.1 MIGRATION PATTERNS IN THE CONTEXT OF VULNERABILITY AND MULTIPLE CLIMATE HAZARDS	35
2.3.2 MIGRATION AS ADAPTATION	37
2.3.3 MIGRATION AND SOCIAL CHANGE: THE 'LEFT-BEHIND'	40
2.3.4 MIGRATION IN INDIA: CASTE, CLASS AND GENDER INTERSECTIONS	42
2.4 CONCEPTUALIZING GENDER AND INTERSECTIONALITY	43
2.4.1 THE INVISIBILITY OF PRIVILEGE: INTERSECTIONALITY, SPACE AND POWER	45
2.4.3 UNDERSTANDING GENDER THROUGH THE MULTIPLE DIMENSIONS OF EMPOWERMENT	48
2.5 THEORETICAL FRAMEWORK	51
2.6 CONCLUSIONS	53
CHAPTER 3. METHODOLOGY	54
3.1 INTRODUCTION	54
3.2 EPISTEMOLOGICAL UNDERPINNING	54
3.2.2 EMPIRICAL APPLICATION OF INTERSECTIONALITY	55
3.3 THE FIELDWORK AND THE STUDY SITES	57
3.3.1 FIELDWORK AND SELECTION OF THE STUDY SITE	58
3.4 METHODOLOGY AND METHODS OF DATA COLLECTION	63
3.4.1 FOCUS GROUP DISCUSSIONS (FGDs) AND PARTICIPATORY RURAL APPRAISAL (PRA)	65
3.4.2 SEMI-STRUCTURED INTERVIEWS	73
3.4.3 KEY INFORMANT INTERVIEWS	77
3.4.4 PARTICIPANT OBSERVATION	78
3.5 DATA ANALYSIS	79
3.6 LIMITATIONS OF THE RESEARCH	81
3.7 ETHICAL CONSIDERATIONS	83
3.7.1 POSITIONALITY AND SUBJECTIVITY	84

3.7.2 WHOSE VOICE?	85
3.7.3 REFLECTING ON THE FIELDWORK EXPERIENCE: WHO GAINS?	85
3.8 CONCLUSIONS	87
<u>CHAPTER 4. ODISHA AND THE MAHANADI DELTA</u>	<u>89</u>
<hr/>	
4.1 INTRODUCTION	89
4.2 BIO-PHYSICAL VULNERABILITY OF COASTAL ODISHA	89
4.3 AGRICULTURE AND RURAL LIVELIHOODS	92
4.3.1 AGRICULTURE PRODUCTIVITY	94
4.3.2 LAND USE AND LAND HOLDING	95
4.4 DEMOGRAPHICS AND POPULATION	97
4.4.1 ADMINISTRATIVE STRUCTURE	98
4.5 SOCIO-ECONOMIC CONTEXT	99
4.6 EMPLOYMENT AND UNDEREMPLOYMENT	100
4.7 CONCLUSIONS	104
<u>CHAPTER 5. ENCOMPASSING GENDER: MULTIPLE DIMENSIONS OF POWER AND INEQUALITY</u>	<u>106</u>
<hr/>	
5.1 INTRODUCTION	106
5.2 OPPRESSION AND PRIVILEGE: HOUSEHOLD STRUCTURE AND KINSHIP SYSTEM	107
5.2.1 YOUNG DAUGHTERS IN-LAW: NAVIGATING MOBILITY AND STRIVING FOR COLLECTIVE VOICE	111
5.2.2 MOTHER IN-LAW-DAUGHTER-IN-LAW RELATIONSHIPS	114
5.3 WOMEN'S AGENCY THROUGH THE STAGES OF LIFE: INTERWOVEN AND REINFORCING NORMS OF PATRIARCHY	116
5.3.1 THE SOCIAL INSTITUTION OF DOWRY	117
5.3.2 "OUR HUSBAND IS OUR MASTER": DOMESTIC VIOLENCE AND INTERNALIZATION OF NORMS	118
5.3.3 PRODUCTIVE AND REPRODUCTIVE ROLES	121
5.3.4 MAY YOU BE THE MOTHER OF A HUNDRED SONS: REPRODUCTIVE ROLES AND MAINTENANCE OF PATRIARCHY	127
5.3.5 WIDOWHOOD	129
5.4 CASTE AND GENDER INTERSECTIONS	132
5.5 CONCLUSIONS	133
<u>CHAPTER 6. INTERSECTIONAL DYNAMICS OF MIGRATION: DRIVERS, PATTERNS AND IMPACTS</u>	<u>136</u>
<hr/>	
6.1 INTRODUCTION	136
6.2 MIGRATION IN THE CONTEXT OF ODISHA	137
6.3 MIGRATION PATTERNS IN THE MAHANADI DELTA	138
6.3.2 CHANGING PATTERNS OF INTERNAL MIGRATION	144
6.3.3 FROM INTERNAL TO INTERNATIONAL MIGRATION	147
6.4 WHO MIGRATES?	149
6.4.1 INTERLINKAGES BETWEEN MIGRANTS' OCCUPATION, SOCIAL NETWORKS AND CASTE	149
6.5 DRIVERS OF MIGRATION: A VOLUNTARY CHOICE OR A FORCED DECISION?	153
6.5.1 LAND OWNERSHIP AND MOBILITY	155
6.5.2 EMPLOYMENT AND GENERATIONAL CHANGES	156
6.5.3 SOCIAL FACTORS, HEALTH AND DEBT	159
6.6 ENVIRONMENTAL CHANGE AND MOBILITY	160
6.7 MIGRATION OUTCOMES	163
6.7.1 OVERVIEW OF REMITTANCE PATTERNS, SUMS AND FREQUENCIES	164
6.7.2 LINKAGES BETWEEN REMITTANCES, FOOD SECURITY, HEALTH AND EDUCATION	164
6.7.3 ASSETS ACCUMULATION: POSITIVE AND NEGATIVE IMPACTS	166
6.7.4 DEPENDENCY PATTERNS OF MIGRATION	169

6.8 CONCLUSIONS	170
<u>CHAPTER 7. DIFFERENTIATED ADAPTIVE CAPACITY: INTERACTING AND SHAPING FACTORS</u>	<u>173</u>
7.1 INTRODUCTION	173
7.2 COMMUNITIES' PERCEPTION OF CLIMATE SHOCKS AND STRESSES AND THEIR IMPACTS ON LIVELIHOODS AND WELLBEING	175
7.2.1 ERRATIC RAINFALL AND CHANGES IN AGRICULTURAL SEASONS	176
7.2.2 EXTREME WEATHER EVENTS: PERCEIVED CHANGES AND IMPACTS	178
7.2.3 SOIL EROSION AND SALINITY INTRUSION: EXTENSIVE IMPACTS, LOW CAPACITY	180
7.3 MEN'S AND WOMEN'S ADAPTIVE CAPACITY IN THE MAHANADI DELTA	182
7.3.1 LIVELIHOODS AND SECURITY OF INCOME	185
7.3.2 PREPARING, COPING AND RECOVERING FROM SHOCKS AND LOSSES	192
7.3.3 LIVE IN SAFE ENVIRONMENTS AND ACCESS QUALITY HEALTHCARE	199
7.3.4 SPEAKING UP AND BEING HEARD: INFLUENCE ON DECISION-MAKING	204
7.4 INTERACTING AND ENABLING FACTORS	206
7.5 SOCIALLY DIFFERENTIATED PRIORITIES AND DETERMINANTS	210
7.6 CONCLUSIONS	214
<u>CHAPTER 8. WOMEN'S ADAPTIVE CAPACITY IN THE CONTEXT OF MALE-OUT MIGRATION</u>	<u>216</u>
8.1 INTRODUCTION	216
8.2 CHANGES IN INTRA-HOUSEHOLD STRUCTURES, ROLES AND POWER RELATIONS	216
8.2.1 REMITTANCES AND WOMEN'S VOICE IN EXTENDED HOUSEHOLDS	217
8.2.2 STRIVING BETWEEN INCREASED MOBILITY AND DEPENDENCY	218
8.2.3 THE BURDEN OF RESPONSIBILITIES: THE PSYCHOLOGICAL IMPACT OF MIGRATION	221
8.2.4 MUTATING 'MEANINGS' OF MIGRATION THROUGH WOMEN'S LIFE STAGES	224
8.3 EXPERIENCES OF PHYSICAL VULNERABILITY	225
8.4 TIME SCARCITY, HEALTH AND PHYSICAL BURDEN	227
8.5 LEFT BEHIND WOMEN IN HAZARD-PRONE AREAS: COPING AND RECOVERING FROM SHOCKS	227
8.6 CONCLUSIONS	229
<u>CHAPTER 9. CONCLUSIONS</u>	<u>230</u>
9.1 INTRODUCTION	230
9.2 RESEARCH QUESTIONS REVISITED	231
9.3 DISCUSSION	236
9.4 POLICY IMPLICATIONS AND RECOMMENDATIONS	243
9.5 LIMITATIONS AND FUTURE RESEARCH	246
<u>REFERENCES</u>	<u>250</u>
APPENDIX A: GUIDING QUESTIONS FOR SEMI-STRUCTURED INTERVIEWS WITH VILLAGERS	274

List of Tables

Table 1. Study villages: summary of key information.....	62
Table 2. Demographic profile of the study villages.....	63
Table 3. Research objective, data required and methods of data collection.....	66
Table 4. Focus group discussions conducted in the three villages between 2015 and 2016.....	67
Table 5. Summary of Participatory Rural Appraisal exercise activities conducted during the fieldwork.....	71
Table 6. List of key informant interviews conducted in 2015 and 2016.....	78
Table 7. Paddy crops phases in Odisha.....	94
Table 8. Population in Delta (2011).....	99
Table 9. Perception of climate variability and changes in agricultural seasons in Kaitha.....	179
Table 10. Historical timeline of climate hazards and their impact (FGD23-K-M).....	183
Table 11. Top ten determinants of adaptive capacity for men and women in Dakhinaveda.....	214
Table 12. Exploratory assessment of differentiated access to the determinants of adaptive capacity, disaggregated by caste and gender.....	216

List of Figures

Figure 1. Conceptual framework showing migration drivers and the influence of environmental change.....	34
Figure 2. Interdependent dimensions of empowerment.....	49
Figure 3. Overarching theoretical framework.....	52
Figure 4. Flood risk and wind risk map in the Mahanadi Delta.....	59
Figure 5. Approximate location of the three study villages (shown by the yellow circles).....	60
Figure 6. Example of the cards used in the power mapping and capacities/problems ranking exercises.....	73
Figure 7. Summary of interview numbers in migrant and non-migrant households by caste, marital status and typology of household (nuclear vs. extended).....	75
Figure 8. Administrative map of Odisha showing the 30 districts of the state, including five coastal districts within the Mahanadi Delta.....	91
Figure 9. Odisha's agro-climatic zones.....	93
Figure 10. Block map district: Kendrapara.....	99
Figure 11. Delta population and main workers by caste.....	103
Figure 12. Percentage distribution of GDP and employment by sector in the Mahanadi Delta (2011).....	104
Figure 13. Hierarchical positioning within an extended family.....	110
Figure 14. Women's time use in Khaita as stated in the daily clock activity.....	127
Figure 15. Men's time use in Khaita as stated in the daily clock activity.....	128
Figure 16. Destination of interstate out-migration from the study villages.....	143
Figure 17. Type of migration (distance and duration) by caste.....	144
Figure 18. Historical timeline: migration and climate change.....	146
Figure 19. Employment at destination disaggregated by caste, in all three villages.....	151
Figure 20. Employment at destination in Nuagan and Dakhinaveda.....	152
Figure 21. Household and individual determinants of differentiated adaptive capacity in the study area.....	187
Figure 22. Interrelated determinants and enabling factors of adaptive capacity.....	212

List of Pictures

Picture 1. Women using the cards during the capacity and problems ranking PRA activity.....	72
Picture 2. Woman cooking on a typical fire-wood burning cookstove.....	125
Picture 3. Pucca house of a household with migration (Dhakinaveda, 2016).....	168
Picture 4. Vulnerability matrix PRA showing men identifying and assessing climate impacts on livelihoods.....	177
Picture 5. Scheduled Caste kutcha houses in low-lying land next to the bank of the river Hansua in Dakhinaveda.....	181

DECLARATION OF AUTHORSHIP

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Title of thesis: Migration and Adaptation: The Impact of Migration on Women's Adaptive Capacity in the Mahanadi Delta, India

I declare that this thesis and the work presented in it are my own and has been generated by me as the result of my own original research.

I confirm that:

1. This work was done wholly or mainly while in candidature for a research degree at this University;
2. Where any part of this thesis has previously been submitted for a degree or any other qualification at this University or any other institution, this has been clearly stated;
3. Where I have consulted the published work of others, this is always clearly attributed;
4. Where I have quoted from the work of others, the source is always given. With the exception of such quotations, this thesis is entirely my own work;
5. I have acknowledged all main sources of help;
6. Where the thesis is based on work done by myself jointly with others, I have made clear exactly what was done by others and what I have contributed myself;
7. None of this work has been published before submission

Signed: Giorgia Prati

Date: 10th October 2019

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Definitions and Abbreviations

ASHA	Accredited Social Health Activist
CARIAA	Collaborative Adaptation Research Initiative
CVCA	Climate Vulnerability Capacity Assessment
DECCMA	Deltas, vulnerability and Climate Change: Migration and Adaptation
FGDs	Focus Group Discussions
FPE	Feminist Political Economics
GAD	Gender and Development
GC	General Caste
GOI	Government of India
GOO	Government of Odisha
GP	Gram Panchayat
IAY	Indira Awaas Yoyana
IDRC	International Development Research Centre
IPCC	Intergovernmental Panel on Climate Change
MGNREGs	Mahatma Gandhi National Rural Employment Guarantee Scheme
NMAET	National Mission on Agriculture Extension and Technology
OBC	Other Backward Caste
OSDMA	Odisha State Disaster Management Authority
PMFBY	Pradhan Mantri Fasal Bima Yojana
PRA	Participatory Rural Appraisal
PSA	Public Distribution System

CHAPTER 1. INTRODUCTION

1.1 Migration and adaptation through the lenses of gender

The climate-migration nexus has attracted increasing attention during the last decade, driven by a strong interest in understanding and predicting the effects of climate and environmental change on population displacement and out-migration (McLeman et al., 2016; Stapleton et al., 2017). This first wave of research focused on exploring the influence of environmental factors on migration decisions, evolving from deterministic approaches that assumed a linear relationship between migration and climate change, to more elaborated notions that suggest multicausality and complex interactions of climatic and non-climatic factors (see Black et al., 2011; Foresight, 2011).

The ‘migration as adaptation’ paradigm is a relatively recent narrative of the climate-migration discourse, shifting attention towards the role of migration as a climate adaptation strategy in the areas of origin, hence focusing on what happens post-migration. This stream of thought has seen the emergence of a number of empirical studies in the last few years, which have broadly investigated the effects of remittances on livelihoods, assets and income and, in turn, the implications of these changes for adaptive capacity (Barnett & Webber, 2010; Gemenne & Blocher, 2016; Gubert, 2002; Tacoli, 2009). A strong focus on material and economic impacts has so far dominated the ‘migration as adaptation’ debate, neglecting social, cultural and power-related dimensions and treating households as static and uniform entities. Migration and adaptation are, however, socially differentiated and mutually shaping processes. The tendency is to conflate heterogeneity into homogenised and monolithic understandings of migration effects on households’ adaptive capacity. In this context, gender analysis is usually confined to differentiation between female and male headship which has proven inadequate to capture intra-household level diversity and to account for social differentiation in general.

This thesis seeks to address these gaps by generating empirical knowledge of the differentiated impacts of migration on adaptive capacity with a focus on the women who stay behind in the areas of origin. The analysis in this study encompasses the social, cultural and cognitive dimensions of migration and its effects on power structures and inequality across, but especially *within*, households. Moving beyond the dichotomy of ‘men versus

women' that has broadly characterized gender within adaptation and adaptive capacity discourses (Carr & Thompson, 2014; Thompson-hall et al., 2016), this research takes an intersectional feminist approach to explore gender through multiple lenses of inequality (Butler, 2004; Crenshaw, 1991; Shields, 2008). I argue in this thesis, that investigations into the migration-adaptation relationship should account for the social and power structures in which these processes are embedded so as to comprehend how migration can be an adaptation strategy and, more importantly, for whom.

1.2 Why it matters?

Migration, adaptation and gender are closely interrelated and mutually shaping processes. Yet, integrated approaches to analyse these interlinkages are still lacking. While migration studies have advanced in considering the multifaceted nature of gender and power relations (Bastia, 2014; Rao, 2014b) and the social, psychological, physical as well as economic impacts of migration on the 'left-behind' (Biao, 2007; Nguyen et al., 2006; Nguyen & Locke, 2014; Toyota et al., 2007; Vullnetari & King, 2011), in migration-adaptation research gender is rarely accounted for. Often it is simplified into stereotyped and homogenised views of women as either 'benefitting' from migration through remittances (e.g. by increasing their decision-making power and material well-being) or being physically overburdened by increased tasks and responsibilities (Djoudi et al., 2016). Besides being myopic, these gender perspectives fail to explain how such changes have concrete impacts on women's adaptive capacity.

Adaptation is not a zero-sum game. A wide body of adaptation literature points out that the adaptation of one group may be at the expense of others (Adger & Vincent, 2005; Morchain, 2018; Tanner et al., 2015). Similarly, adaptive capacity is unequally distributed across, but also within, social groups and is continuously shaped by socio-economic and cognitive factors that interact at multiple scales – e.g. household, community, local (Eriksen & Lind, 2009; Otto-Banaszak et al., 2011). Transformative adaptation theories emphasize the need for adaptation measures to embrace concepts of power and inequality in order to enhance social inclusion and reduce the risk of reinforcing existing vulnerabilities (Eriksen et al., 2015; Kates et al., 2012). However, existing adaptive capacity frameworks are largely theory-driven and predominantly focused on macro-scale and assets-based assessments that are unable to capture the diversity of local realities (Kuruppu & Liverman, 2011; Thompson-hall et al.,

2016; Toole et al., 2016). Nuanced and empirically-based understandings of adaptive capacity are therefore generally lacking (Jiao & Moinuddin, 2015).

Inspired by transformative adaptation debates and acknowledging the limits of existing adaptive capacity frameworks, this thesis adopts an experimental approach to explore adaptive capacity from a bottom-up perspective. It focuses the analysis on men's and women's own understanding of their needs, capacities and priorities while contextualising it within the social, economic and political contexts in which these views are embedded. The standpoint is that adaptive capacity is neither a homogenous nor a static concept and that it is necessary to comprehend how inequality moulds people's perception of what determines or hinders their capacity to adapt to environmental change. Migration is located in this discourse as it has diversified tangible and intangible impacts on household structures (Hagen-zanker et al., 2014; Rao, 2014b; Singh, 2019; Vullnetari & King, 2011), which influence the underlying processes that shape adaptive capacity in socially differentiated ways; for instance, through changes in social roles and power relations. As for all adaptation strategies, the 'effectiveness' of migration should be questioned beyond its material impact and should consider diverse and unequal contexts. First unpacking the components of adaptive capacity, this study then looks at how these are influenced by migration, using gender as analytical category and examining it through the lens of intersectionality.

1.3 The Mahanadi Delta as case study

As a PhD student associated to the 'Deltas Vulnerability and Climate Change: Migration and Adaptation' (DECCMA) project, this study focused on a delta region and drew on empirical data collected in the Mahanadi Delta, located in the east coast of India, in the state of Odisha.

The demographic, socio-economic and environmental characteristics of deltas make them particularly interesting case studies to explore the climate-migration relationship. Rich in biodiversity and ecosystem services, delta regions have historically been densely populated and highly mobile (Bianchi, 2016; Szabo et al., 2018). At the same time, the low elevation of deltas and the increasing threat of climate-induced sea-level rise render these areas highly sensitive to the impacts of climate change (Nicholls et al., 2019). The Mahanadi Delta, in particular, is also situated in the most cyclone-prone region in India – hence exposed to multiple hazards - and in one of the poorest states in the country (Hazra et al., 2019).

The research draws upon data collected in three villages in the northern district of Kendrapara, among the most risk-prone districts in the Mahanadi Delta, highly vulnerable to floods, storm surges and high-speed cyclonic winds (Ghosh et al., 2019) and severely affected by coastal erosion, which is particularly accentuated in this area (Mukhopadhyay et al., 2018). Data were collected during a one-month preliminary fieldwork in September 2015 and a longer fieldwork period between September and November 2016 through a mix of qualitative research methods, including semi-structured interviews, focus group discussions, Participatory Rural Appraisal and observation. Particular attention was given to ensure that the research methods and the data collection responded to the needs of the intersectional analysis which, as explained before, constitutes the underpinning approach of this study.

1.4 Research aim and objectives

The overall aim of this thesis is to *understand the impact of migration on women's adaptive capacity*. The focus is on women who stay behind in the areas of origin.

Drawing on the knowledge and methodology gaps highlighted in the earlier discussion, this research has focused on three primary objectives:

-
1. **Understand gender relations, power dynamics and underlying causes of inequality**

 2. Investigate socially differentiated migration dynamics and outcomes

 3. Identify socially differentiated determinants and constraints to adaptive capacity

To gain complex understandings of adaptive capacity in the context of migration, there is the need to unpack power and gender relations and the social and cultural processes that limit/enable adaptive capacity in the first place (Objective 1), to analyse migration dynamics and outcomes and how these shape gender relations and power structures (Objective 2), and finally to gain an in-depth understanding of the significance of adaptive capacity including how it is constituted and how barriers and determinants are socially differentiated (Objective 3).

The next section illustrates the thesis outline while also explaining how these three objectives were addressed and how they build upon each other to ultimately respond to the

overall research question: *What is the impact of migration on women's adaptive capacity in the Mahanadi Delta?*

1.5 Thesis outline

This introductory chapter explained the aim and rationale of this study, where it lies in the climate-migration debate and which research questions it has sought to address. The remainder of the thesis is structured as follows.

Chapter 2 presents a critical discussion of the theories and key concepts that underpin this study within the migration, adaptation and gender literature. It reviews the existing approaches to adaptation and adaptive capacity, outlining their characteristics and reflecting on their ability to capture social differentiation. It then engages with the climate-migration debate, discussing the interlinkages between migration and adaptation, and how gender perspectives are integrated within these discourses. Finally, the chapter further unwraps the concept of gender and explores the notion of intersectionality. It concludes by briefly presenting the conceptual framework of this research positioning it within the climate-migration debate.

Chapter 3 focuses on the research methodology. The chapter discusses the epistemology that has influenced the research approach and expands on the research design. It further elaborates on the fieldwork process, including the selection of the study villages and their main characteristics. The chapter also describes the data-gathering tools, explaining why and how they were employed to address specific data needs and expands on the data analysis approach which was taken. Finally, it explains the research ethics considerations, applying them to the entire research process.

Chapter 4 provides insights into the geo-climatic, social, economic and demographic context of Odisha, zooming into the Delta and the district of Kendrapara where the study villages are located. This chapter helps frame the analytical discussion (Chapters 5, 6, 7 and 8) within the broader socio-economic and agrarian context of Odisha highlighting social, economic, demographic and physical traits at state, Delta and district level. The analysis is disaggregated by gender and caste whenever possible and when data are available.

Chapter 5 delves into gender and power dynamics to identify the underlying processes and power structures that produce inequality and which shape, and are shaped by, migration and adaptation processes. The chapter investigates the mutable intra-household power hierarchies, including women-hierarchies, and the normative and social structures in which they are embedded. It explores how multiple axes of power and social identities interact across scales (e.g. intra-household, household, local levels), generating and reinforcing patterns of oppression and privilege and influencing social roles. It finally explores the gender division of labour, outlining differences emerging from the interaction of factors such as gender, age, household composition and position within the kinship system. The analysis of this chapter demonstrates the multiple dimensions of inequality and the mutability of power relations, offering a comprehensive view of the root causes of social differentiation beyond men vs. women dichotomies.

Chapter 6 investigates migration patterns and dynamics in the study villages, showing that migration is male-dominated and predominantly permanent and inter-state, with few cases of international migration to the Gulf States. The chapter unpacks the drivers of migration, highlighting the complex interconnection of social, economic, environmental and cognitive factors that shape migration decisions. It also points to intergenerational changes in the way migration is perceived, which suggest an evolving role of migration for adaptation and rural development. The chapter zooms into the interconnections between migration and environmental stressors finding that, under certain conditions, climate and environmental factors can also act as barriers to migration thus be linked to immobility. The chapter concludes with an analysis of the outcomes of migration, pointing to a wide social differentiation depending on the household composition and socio-economic conditions pre-migration, the type of migration, and migrants' individual characteristics (e.g. education, skills, caste, age, aspirations) as these influence access to jobs and social networks. The chapter emphasizes a significant inter-caste differentiation in terms of migration drivers, patterns and outcomes.

Chapter 7 addresses the third research objective by providing an empirically based understanding of adaptive capacity in the study area through the lenses of intersectionality. Adaptive capacity is analysed here through a novel approach centred on people's own perspectives of their needs, capacities and priorities to better cope with environmental stressors and enhance their well-being. In doing so, the chapter emphasizes the complexity

and diversity of local realities, underscoring that adaptive capacity is not a homogenous and monolithic concept and that it is deeply embedded in social and power structures. By unpacking the factors shaping adaptive capacity, this chapter lays the groundwork for the migration-adaptation discussion undertaken in Chapter 8, which examines how these factors are differently influenced by migration.

Chapter 8 draws on chapter 5, 6 and 7 to address the overarching aim of this thesis “to understand the impact of migration on women’s adaptive capacity with a focus on the women who stay behind”. The discussion expands on the differentiated impact of migration on household structures and intra-household power dynamics examined in Chapter 6, as well as on women’s subjective well-being. The chapter then builds on the analysis conducted in Chapter 4 to investigate the implications of these changes for adaptive capacity and presents a revisited conceptual framework.

Chapter 9 concludes by summarizing the findings and relating them to literature on climate adaptation, adaptive capacity, migration and gender. It further discusses some policy implications and recommendations. The chapter, and thesis, close with reflections the study limitation and on the use of intersectionality, and suggestions for further research.

CHAPTER 2. LITERATURE REVIEW

2.1 Introduction

This chapter analyses the theories and body of literature underpinning this study within the fields of climate adaptation, gender and migration. The chapter engages with key concepts in these areas and with existing debates on the climate-migration nexus from an adaptation and gender perspective. As noted in Chapter 1, this study takes a novel approach to the migration and adaptation discourse by exploring it through an integrated framework that accounts for social differentiation. Dissecting existing theories is therefore pivotal to explore where and how these fields can come together to offer comprehensive and nuanced understandings of complex climate-migration realities.

The chapter begins by investigating the notions of adaptation and adaptive capacity and unwrapping the various angles through which these concepts have been theorized and debated (section 2.2). It continues by critically analysing existing approaches to adaptive capacity assessments and reflecting on their limitations. Section 2.3 considers the current debates and frameworks that conceptualise the migration-climate change nexus. This discussion includes a focus on the implications of migration for those who remain behind and provides insights into social differentiation within migration processes in the context of India. Next, the chapter delves into the conceptualisation of gender, notions of women's empowerment and the theoretical foundation of intersectionality, which is the analytical lens adopted in this study (section 2.4). To conclude, section 2.5 presents the theoretical framework that guided this research.

2.2 The role of adaptation in shaping environmental hazard outcomes

The concept of adaptation draws upon a wide range of disciplines. In physical and natural sciences - where the term was first used - adaptation refers to adjustments made by organisms to withstand and adapt to external stresses (Burch & Robinson, 2007; Engle, 2011; Gallopín, 2006; Smit & Wandel, 2006). The focus is therefore on internal processes of adjustment to external contexts. The term was later employed in cultural ecology and anthropology where the attention shifted to human adaptation and people's ability to adapt to dynamic social-ecological contexts (Engle, 2011; Thomsen et al., 2012). In the climate change arena, the notion of adaptation encompasses the interaction between human and natural systems and generally refers to human adaptive responses to climate stresses and

shocks (Adger et al., 2003, 2005; D. R. Nelson et al., 2007; Tompkins et al., 2010) The Intergovernmental Panel on Climate Change (IPCC) defines adaptation as:

The process of adjustment to actual or expected climate and its effects. In human systems, adaptation seeks to moderate or avoid harm or exploit beneficial opportunities. In some natural systems, human intervention may facilitate adjustment to expected climate and its effects (IPCC, 2014:5)

Some critiques to this conceptualization of adaptation point to its human-centred nature and to the fact that it can potentially legitimate changes to external contexts, including the environment, in order to suit the adaptation needs of individuals and social groups. Thomsen et al. (2012) argue that this notion of adaptation allows externally directed interventions aimed at ‘manipulating’ ecological systems, and that it moves the focus away from internal adjustments of human systems to top-down changes in the external contexts. It is worth highlighting that adaptation is generally understood as being situated at the intersection of complex interactions between human and ecological systems. Thus, it is normally assumed that it entails notions of both internal and external changes. However, the interpretation given by Thomsen and colleagues invites us to maintain a critical eye as to the meanings that the term adaptation can assume, especially as there is not a universally accepted definition. The way adaptation is defined is important as it has implications for determining what and who is addressed through policies, interventions and funding and which priorities are put forward.

Climate adaptation is intended as a dynamic process encompassing activities, actions and decisions negotiated within social structures (Nelson et al., 2007). There is not one single approach to adaptation as strategies differ across contexts and social groups, hence adaptation can take many different forms and involve a variety of actors (Adger et al., 2003). Being conceived as a process of long-term adjustments, adaptation is understood in literature and practice as differing from coping¹ which refers instead to short-term risk-mitigation responses (Fischer, 2019; Smit & Wandel, 2006). Despite the theoretical differentiation between coping and adapting, it is difficult to draw clear boundaries between the two processes in practice, and so the terms are often used interchangeably. Fisher

¹ The Intergovernmental Panel on Climate Change (2014) defines coping as: *“the use of available skills, resources and opportunities to address, manage and overcome adverse conditions with the aim of achieving basic functioning [...] in the short to medium term”*.

(2019) argues that adaptation should be associated with planned, proactive and transformational responses while autonomous and reactive responses should be treated as coping strategies. Under this lens adaptation would gain an almost inherently positive outcome. Yet, even adaptation efforts can lead to maladaptation and increase the vulnerability of others (Barnett & O'Neill, 2010; Gallopín, 2006; Juhola et al., 2016). Moreover, as will be discussed later in this chapter, both planned and autonomous responses are needed to enhance people's ability to adapt and they often occur in a mix of anticipatory, concurring and reactive fashions (section 2.2.1). While this study acknowledges the theoretical distinction between adaptation and coping, it considers adaptation as a complex process involving both short- and long-term as well as autonomous and planned responses with potential positive and negative outcomes across and within social groups.

2.2.1 Links between adaptation and adaptive capacity

The concept of adaptation is closely related to that of adaptive capacity. Adaptive capacity is a necessary precondition for adaptation and one of the three components of vulnerability to climate change together with *sensitivity* and *exposure* (Gallopín, 2006; Smit & Wandel, 2006). Sensitivity defines the degree to which a system is affected by a disturbance - either internal or external - while exposure refers to the relationship between the system and the perturbation (Gallopín, 2006). For example, exposure could be determined by being located in flood-prone areas, while sensitivity might be based on living in precarious homes that are less resistant to the impacts of extreme weather events. Exposure and sensitivity are interdependent and closely related to the magnitude and the type of climatic risk as well as to socio-economic conditions (Smit & Wandel, 2006). Adaptive capacity refers to the latent ability to anticipate, adapt and recover from the impacts of environmental and climate change as well as to capitalise on new opportunities that may arise from the adaptation process (Adger et al., 2003; Folke et al., 2003; IPCC, 2014; Smit & Wandel, 2006). Adaptive capacity is thus pivotal to adaptation. It is also entangled in the concept of vulnerability albeit not in a straightforward way, as high adaptive capacity does not necessarily translate into reduced vulnerability (IPCC, 2014).

The theoretical assumption of the relationship between adaptation and adaptive capacity is that the more adaptive capacity within a system (community, household or individual), the greater the likelihood that the system is able to successfully anticipate, manage and recover from climate risks. However, this causal understanding bears limitations, as evidence

suggests that adaptive capacity does not necessarily lead to adaptation. Some studies show that households with higher adaptive capacity may adapt less successfully than households with lower levels (Coulthard, 2008; Nielsen & Reenberg, 2010). The concept of adaptive capacity should, in fact, expand from the preconditions needed to adapt to include the *'ability to mobilize these elements'* (Nelson et al., 2007:397). The links between capacity and action are complex and far from linear. Traditional deterministic approaches that only consider socio-economic and institutional dimensions as determinants of adaptive capacity (J. Gupta et al., 2010; Smit & Pilifosova, 2003; Smit & Wandel, 2006; Yohe & Tol, 2002) fall short of explaining why adaptation may not manifest when such determinants are fulfilled.

New research points out that to fully examine responses to climate change there is a need to go beyond the traditional focus on assets and resources, by integrating psycho-social and cultural dimensions into the analysis (Grothman & Patt, 2005; Kuruppu & Liverman, 2011; Mortreux & Barnett, 2017). The transition from capacity to action goes through decision-making processes that can inhibit or enhance adaptive responses, and that are influenced by socio-cognitive elements (i.e. motivation, risk-perception, beliefs and perceived self-efficacy) as well as culture and norms (Burch & Robinson, 2007). Psychological models of individual adaptation to climate change inspired by Rogers' (1983) Protection Motivation Theory,² show that perceptions of risk and efficacy are crucial in explaining adaptive behaviour and can be strong predictors of adaptation intentions. For example, people's perception of climatic risks influence the type of adaptation strategies that are undertaken (Bryan et al., 2009; Grothman & Patt, 2005; Kuruppu & Liverman, 2011). Similarly, adaptation intentions may be affected by descriptive social norms (i.e. what is perceived to be the right behaviour in a situation) and perceived adaptation costs - including social cost if adaptation entails breaking social norms (Kuruppu & Liverman, 2011; Truelove et al., 2015). Socio-cognitive factors and socio-cultural and economic dimensions are interdependent. Self-efficacy beliefs, in fact, are linked to social and economic conditions – an individual's evaluation of their ability to cope with a threat is likely to be influenced by resources, knowledge and social capital (Grothman & Patt, 2005). Economically and socially marginalised groups may perceive themselves as having low control over risk due to their disadvantaged conditions, and as a consequence may have a magnified perception of the

² The Protection Motivation Theory (PMT) pioneered by Rogers (1983) originates in the health literature where it sought to understand how people cope with risk in health-related contexts. The PMT was later employed in the climate adaptation field inspiring the Grothman and Patt's (2005) Model of Private Proactive Adaptation to Climate Change (MPPAC) which investigates the role of heuristic and socio-cognitive factors on adaptation behaviour. The MPPAC still remains the foundation of psychological individual adaptation studies.

risk and of its impacts (Satterfield et al., 2004). Finally, perceived self-efficacy and adaptation intentions can also be influenced by past experiences of stressful events which can lead to anticipatory adaptation behaviour or, on the other hand, the denial of protective strategies which often lead to maladaptation (Grothman & Patt, 2005). The role played by psychosocial and cultural factors in transforming adaptive capacity from latent to objective adaptation through their interrelations with social, economic and institutional elements, is still an under researched area. As will be discussed later in this chapter, while there is growing conceptual recognition about the importance of including these aspects, overall adaptive capacity assessments fail to capture micro-level processes and to explain how they interact with meso and macro structures.

2.2.2 Autonomous and planned adaptation

Adaptation is carried out at different levels by various actors. Spontaneous adjustments undertaken by individuals, households and communities to respond to experienced or perceived climatic (and non-climatic) risks are generally referred to as *autonomous adaptation* strategies (Engle, 2011; Fenton et al., 2017; Smit et al., 1999). Explicit and deliberate interventions led by governments, on the other hand, are known as *planned adaptation* measures (Adger et al., 2003; Mersha & Laerhoven, 2018; Rahman & Hickey, 2019). Planned adaptation is usually anticipatory (ex-ante), while autonomous adaptation tends to be concurrent (during) or reactive (Smit et al., 2000).

As noted before, humans have an innate ability to adapt when faced with adversity (Engle, 2011). However the magnitude of the impacts of climate change poses enormous challenges that have led governments to engage in adaptation planning. Although often discussed as parallel processes, autonomous and planned adaptation are interdependent and intrinsically linked (Adger et al., 2003; Mersha & Laerhoven, 2018). Planned adaptation interventions can either catalyse autonomous adaptation processes or hinder them. Top-down government interventions that do not account for the way people have been adapting autonomously risk being rejected. Moreover a poor understanding of heterogeneous local adaptation responses can (re)produce inequalities by overlooking differentiated vulnerability and adaptive capacity (Fenton et al., 2017; Mersha & Laerhoven, 2018; Rahman & Hickey, 2019). Recent studies have pointed to the importance of paying greater attention to the interplay between planned and autonomous adaptation in order to strengthen synergies and reduce negative outcomes. In Bangladesh, Rahman and Hickey (2019) highlight that the disconnection between engineering-focused public adaptation

interventions and autonomous local adaptation can increase climate vulnerability. They argue that adaptation planning should start from an in-depth understanding of local adaptation dynamics and build synergies with autonomous adaptation to capitalize on local knowledge and enhance long-term adaptation. Similarly, insights from drought-prone areas in Ethiopia show that when planned adaptation disregards autonomous adaptation, the latter can be hindered and effects could exacerbate inequalities (Mersha & Laerhoven, 2018). Rigid conditions regulating the Productive Social Safety Net Programme (PSNP) - a social protection programme aimed at responding to food security needs in drought-affected areas - were found to constrain autonomous adaptation activities of household beneficiaries. Mesha and Laerhoven (2018) explain that the public work component of the PSNP (PSNSP-PW) was taking time away from on-farm adaptation activities and that it was constraining temporary migration, which was indicated by their respondents as a key livelihood diversification and income-generating strategy. While some male household heads decided to leave, as their spouse or adult children who remained behind could perform the PSNSP-PW share, female-headed households did not have that option. The autonomous vs. planned adaptation trade-offs emerged as particularly affecting female headed households.

Growing knowledge of the interplay between autonomous and planned responses is reaffirming the need for national adaptation planning to reflect and support autonomous adaptation (Adger et al., 2003; Eriksen & Lind, 2009; Fenton et al., 2017). For this to happen, a stronger understanding of local adaptation dynamics is needed (Thorn et al., 2015), in particular understandings of social differentiation. Since neither autonomous or planned adaptation are asocial and gender neutral, disjointed planning could unintentionally emphasize and magnify existing vulnerabilities (Mersha & Laerhoven, 2018).

2.2.3 Generic and specific adaptive capacity

Adaptive capacity encompasses two intersecting dimensions: specific and generic capacities. *Specific capacities* refer to the ability to respond and manage specific and identified climate risks; while *generic capacities* are related to the ability to respond to social, economic and structural issues (i.e. education, income, health) generally linked to development aspects (Eakin et al., 2014; Lemos et al., 2016; Sharma et al., 2009). Despite specific and generic capacities being closely interrelated, policies and programmes still tend to address these dimensions in silos, leading to an artificial division between climate risk

management measures versus more generic development planning. There is growing consent among climate change scholars about the need to bridge these sectors and approach them simultaneously and explicitly in order to be able to enhance overall adaptive capacity (Ayers & Huq, 2013; Eakin et al., 2014; Eriksen & Brien, 2011; Lemos et al., 2016). Adaptation to climate change does not happen in a vacuum. Adaptation measures that only focus on risk management, overlooking the socio-economic context in which vulnerability to those risks arises, would be myopic. At the same time, development planning that does not explicitly take into account climatic risks is unlikely to foster climate adaptation.

Some researchers argue that poverty is one of the most salient indicators of climate change vulnerability because the poorest are disproportionately affected by structural development issues and thus have limited resources and opportunities to prepare and respond to climatic risks (Cannon et al., 2003; Ribot, 2009). This perspective puts an emphasis on generic capacities as a means to reduce vulnerability in the long-term (Smit & Pilifosova, 2003). Development – understood as improvement of the quality of life for the poorest based on social, economic and institutional factors that affect their entitlements and capabilities (Sen, 1999) – plays a key role in shaping people’s opportunities and barriers to adaptation. However, adapting to climate and environmental change entails capacities that go beyond addressing basic development needs. A sole focus on development would therefore be too narrow. Vulnerability assessments that account for climate-related risks, for example, include a wider range of highly vulnerable categories compared to assessments that use poverty as the only proxy. Climate change vulnerability is, in fact, not limited to notions of poverty.³

Bahinipati and Patnaik (2014) find that income enhancement, livelihood diversification and infrastructure development in Odisha increase the effectiveness of disaster risk reduction programmes and contribute to reduce rural households’ vulnerability to climate stresses and shocks. The authors point to the need for strengthened coordination between development and climate policies in order to maximise their combined positive effect for vulnerability reduction. Similarly, in their study in Brazil Lemos et al. (2016) found that households with better socio-economic conditions had higher levels of specific capacity and were more likely to invest in adaptation technologies - irrigation systems in that case. They

³ This study embraces the comprehensive concept of multidimensional poverty which is discussed later in this chapter (section 2.2.4).

also highlighted that poverty-reduction measures alone, such as cash-transfers, were insufficient to increase the ability of poor households to manage risk during droughts; pointing out that generic capacities do not necessarily translate into specific capacities. Their findings confirm that, to enhance overall adaptive capacity, a combination of both is needed. While generic capacities create the preconditions for adaptation, specific capacities refine the ability to manage identified climatic stresses.

The concept of 'adaptive development' was proposed by some scholars as a framework for combining development and adaptation (Agrawal & Lemos, 2015; Eakin et al., 2014). Adaptive development provides a new paradigm focused on synergies and trade-offs between generic and specific capacities aiming to reduce competing and incompatible outcomes. Development programmes that do nothing to account for climate change-related risks could in fact unintentionally increase vulnerability; vice versa, technology-focused adaptation measures that are disconnected from the socio-economic context could hinder development achievements. A synergic integration of development and adaptation seems to be the most appropriate and effective approach to building long-lasting adaptive capacity. However, adaptive development remains a valid conceptual framework with little implementation. Some of the challenges associated with a systematic uptake of such an approach are related to measuring the effectiveness of development interventions on climate adaptation (Eakin et al., 2014). For example, it remains unclear how to measure the contribution of food security to reduced vulnerability to climate stresses despite it being a necessary condition. Empirical research that explains the interplay of generic and specific capacities is still limited, yet generating evidence is critical to inform donors, governments and actors in the climate change and development arena about the benefits and trade-offs of development and adaptation integrated approaches.

The next section zooms into the concepts of multidimensional poverty and multidimensional wellbeing. The latter, in particular, is pivotal to understand the conceptual foundation of transformative adaptation which is discussed later in this chapter (section 2.2.5).

2.2.4 From income poverty to multidimensional wellbeing

Historically, the concept of poverty has been dominated by notions of economic and material wellbeing understood as the 'ability to acquire a level of income that enables to maintain basic living standards' (Wagle, 2005). Understanding poverty as material deprivation is however myopic and leaves out critical aspects of human wellbeing. Drawing on the work of Amartya Sen (1985, 1992, 1999), more recent understandings of poverty have been linked to the broader concepts of freedom, livelihoods, human rights and social inclusion leading to notions of multidimensional poverty (Alkire et al., 2014). Empirical research on people's experiences of poverty has forcefully pointed out that poverty consists of many interwoven dimensions, which in combination, limit freedom of choice and action and reinforce powerlessness (Narayan et al., 2000). Multidimensional poverty consists therefore of physical, human, social, environmental and psychological dimensions, all influencing each other (Alkire et al., 2014; Wagle, 2005).

Sen's capability approach played a key role in promoting a reconsideration of the concept of poverty suggesting that it results from a lack of 'capability' to achieve wellbeing (Wagle, 2005). This type of approach challenged the narrow focus on income and material resources people owned and shifted the attention to 'what people need to live the life they have reason to value' (Dreze & Sen, 2013; Nussbaum, 2001; Sen, 1999). The capability approach argues that the focus should be on the person rather than the standards of living, and on the ability of people to achieve 'valued functioning' that range from basic needs to psychological and relational factors (Sen, 1983; White, 2010b). Various conceptual frameworks have contributed to add perspectives to the notion of multidimensional poverty. Social inclusion studies, for example, emphasize that poverty is closely related to the capacity to participate in the society in which one lives, including political, economic and civil participation (Atkinson & Marlier, 2010). Livelihoods approaches that also draw on the notion of capability, provide a comprehensive framework to analyse the interactions of social, political, environmental and economic dimensions of poverty and vulnerability through the lens of assets, resources and capitals (Chambers & Conway, 1992; Scoones, 1998, 2015). Livelihoods frameworks offer a bottom-up perspective of poverty that shows the complex structures and processes which influence people's lives (White & Ellison, 2007a). Such approaches tend, however, to focus on what people 'have' overlooking their goals and aspirations and only superficially engaging with social and cultural dimensions that shape their lives (Coulthard et al., 2011; De Haan & Zoomers, 2005).

Building on the sustainable livelihoods framework and Sen's capability approach, the concept of comprehensive wellbeing offers an agency- and people-centred view that encompasses material and social resources while also engaging with psychological perspectives and subjective evaluation (White & Ellison, 2007a). While there is not a universal definition of wellbeing, recent conceptual understandings include the three dimensions of objective, subjective and relational wellbeing (White, 2010b). A 3-dimensional (3-D) human wellbeing perspective represents an important paradigm shift towards holistic, person-centred and dynamic understandings of people's lives as embedded in socio-cultural contexts (Gough et al., 2007; McGregor, 2007). In emphasizing the interlinkages between these three dimensions, it moves away from outcome-centred static notions of wellbeing. The 3-D wellbeing framework adds further complexity to the Sen's capability approach that has been criticized for overlooking the relational aspect and the social perspective of human agency (Deneulin & McGregor, 2010; Evans, 2002). While the capability approach recognizes that human agency is situated within the social context, this aspect is not always reflected in its empirical implementation (Robeyns, 2017; Szaboova, 2022).

The relational dimension of wellbeing emphasizes the significance of power relations and social structures pointing out that social and psychological needs are socially constructed (Coulthard, 2008; White, 2010b; White & Ellison, 2007a). The 3-D wellbeing framework conceives the material, relational and subjective dimensions as interdependent, dynamic and mutually constituting (McGregor & Sumner, 2010). The construction of meanings passes through cognitive (subjective) and social processes (relational) that mediate what is considered 'desirable' and 'acceptable'. Subjective perceptions of 'feeling good/happy' are influenced by social and cultural values that, in turn, shape what people perceive as needed to make their life fulfilled (White, 2010b). These interactions take place across multiple scales and can be self-reinforcing in negative or positive ways. Individual wellbeing is therefore intimately linked to collective and societal wellbeing and is profoundly shaped by social and cultural contexts (White, 2015). Social identities, such as gender, age and caste, play a crucial role in the achievement of wellbeing in material, social and psychological terms. Embracing this view, White (2010: 168) points out that promoting the wellbeing of poor and marginalised people implies "*transforming the terms on which they engage with others and others engage with them*". The relational dimension of wellbeing helps seeing it

as a process rather than a state to be achieved and emphasizes the importance of looking at it as something that changes through the course of life (White, 2015). A multidimensional wellbeing approach challenges traditional views of poverty, highlights the significance of social differentiation and encourages rounded understandings of social complexity. The focus is therefore shifted to *“what people need to be able to have, to be able to do and be able to feel in order to be well in society”* (Coulthard et al., 2018:245), acknowledging that different people have different meanings of wellbeing.

2.2.5 Transformative vs. incremental adaptation: Whose adaptation?

Similarly to the notion of multidimensional wellbeing, the concept of transformative adaptation highlights the significance of power relations and social structures arguing that people’s adaptive capacity needs to be understood within social and cultural contexts (Fedele et al., 2019; Pelling et al., 2015). As pointed out earlier in this chapter, adaptation and adaptive capacity are closely embedded in socio-economic systems and development contexts where people’s needs, capacities and perceptions are continuously shaped. Framing adaptation and adaptive capacity as homogenised and neutral processes would be highly misleading. Adaptation measures that may be positive for a group or an individual could increase the vulnerability of others (Adger & Vincent, 2005; Eriksen et al., 2015; Morchain, 2018; Tanner et al., 2015). Likewise, adaptive capacity is deeply rooted in issues of power and inequality, and hence highly differentiated and unequally distributed (Eriksen & Lind, 2009). Socio-economic characteristics, social roles and identities influence people’s perception of the environment, as well as their priorities and needs, generating subjective understandings of adaptation (Otto-Banaszak et al., 2011). Theoretical and practical approaches to adaptation should therefore always reflect on whose adaptation and whose capacity are considered as well as how adaptation outcomes interact with the power structures producing, or reinforcing, the vulnerability of certain social groups.

Drawing on the debate of specific and generic capacity, some authors argue that adaptation should not be limited to notions of environmental risk, but rather challenge the underlying conditions that perpetuate vulnerability and inequality. The argument is that adaptation should be about bringing transformational change and contesting power hierarchies that reduce the capacity to adapt in the first place (Eriksen et al., 2015; Kates et al., 2012; O’Brien, 2012; Pelling et al., 2015). The concept of transformation frames adaptation in a dynamic and agency-centred perspective that entails challenging social, political and value systems

in order to tackle the root causes of vulnerability. Such an approach would also mitigate the risk of adaptive responses, especially technology-driven planned measures, to reaffirm the interests and privileges of those who retain power and hence to perpetuate inequality.

Transformative adaptation encompasses deep change and is opposed to what is commonly referred to as incremental adaptation, which consists of small adjustments that preserve the overall status quo (Fischer, 2019; O'Brien, 2012; Pelling, 2011; Pelling et al., 2015). Transformative change is key to addressing differentiated adaptation needs that lie at the intersection between climate change and social inequalities. However, to be fully inclusive, transformative processes require a careful context analysis as they may also come with 'undesirable' outcomes (Marshall et al., 2012; O'Brien, 2012). Such context analyses can be particularly complex when, as is the case with transformative capacity, they include social and psychological dimensions. For instance, Marshall et al. (2012) argue that the capacity to implement substantial change may be limited by psychological and emotional factors such as place attachment – when adaptation involves migration or relocation for example – or occupation identity – if transformation consists of significant livelihood changes.

2.2.6 Measuring differentiated adaptive capacity

The discussion in this chapter has so far highlighted the multidimensional and complex nature of adaptive capacity, depicting it as a process that differs within and across societies and contexts. Moreover, it has emphasized its close and interdependent relationship with the concept of adaptation – the capacity to adapt is indeed functional to adaptation. Measuring adaptive capacity entails unpacking the concept into a set of indicators corresponding to its key determinants. Policy makers, researchers and practitioners are often divided on the methodology to use to identify such components of adaptive capacity (Hinkel, 2011). In order to develop effective adaptation measures and policies it is first pivotal to understand what factors are shaping adaptive capacity and how they interact with each other across scale and across time (Brooks et al., 2005). Whilst there is a recognition that one-size-fits all approaches are inadequate to capture context diversity, adaptive capacity assessments still tend to rely on deductive and large scale (national-level) aggregated data analysis which masks the differentiated nature of adaptation (Mortreux & Barnett, 2017).

The large majority of studies seeking to develop methods to measure adaptive capacity has drawn on the Sustainable Livelihood Framework (SLF) (see Hammill et al. 2005; Scoones, 1998). The SLF derives from the sustainable livelihoods approach (SLA) that traces its roots in the 1990s (De Haan, 2012; Small, 2007). Inspired by Sen's work on famine and entitlements, the SLA combines the concepts of capabilities, agency and environmental sustainability giving more depth to the notions of development that were narrowly focused on income-poverty and production (Chambers & Conway, 1992). One of the main values of the SLA was that it put people at the centre moving away from a focus on 'deprivation', which dominated in the 1980s (see section 2.2.4), to emphasise people's lives and agency (Small, 2007). In the SLF, people are seen as building their livelihood strategies on a set of critical resources clustered under five capitals (human capital, financial capital, social capital and physical capital) (Chambers & Conway, 1992; Hammill et al., 2005; Scoones, 1998). At the core of the approach, and framework, there is the concept of 'sustainable livelihoods' coined by Chambers and Conway (1991) - and adopted in this study - which describes a livelihood as comprising *"the capabilities, assets (stores, resources, claims and access) and activities required for a means of living"* and consider it sustainable when *"it can cope with and recover from stresses and shocks, maintain or enhance its capabilities and assets, and provide sustainable livelihood opportunities for the next generation [...]"* (Chambers & Conway, 1991:6).

The SLA has brought attention to participatory approaches and environmental considerations in mainstreamed development while also pointing to the multidimensional nature of poverty and to the importance of agency. However, it fails to engage with notions of power and social structures (Small, 2007). Consequently, the SLF focuses on trade-offs between capitals without providing a framework that allows to understand the process through which these interact and shape each other. Moreover, livelihoods tend to be seen in an economic and materialistic view and the less tangible aspects that influence livelihood strategies, such as power, inequality and social norms, are neglected (De Haan, 2012). The application of these theories to climate change has resulted in a strong focus on entitlements to material assets and social opportunities, which are usually translated into indicators that fall into macro-categories related to resources (natural, physical, financial), governance, technology, knowledge and social capital. The perspective is usually additive, meaning that more entitlements are seen as more capacity. The weight of the different entitlements or determinants varies across studies. Some authors emphasize the role of

governments and public institutions in determining adaptive capacity (Brooks et al., 2005; Agrawal, 2008; Gupta et al., 2010; Berman et al., 2012). Agrawal and colleagues (2008) argue that public, private and civic institutions are central in determining capacity to adapt since they influence opportunities and outcomes of individual and collective action and can support, or undermine, adaptation responses. Governance and institutions certainly have impacts on several key aspects of generic capacity including health, education, infrastructure and natural resources management, as well as determining planned adaptation (Berman et al., 2012; Castells-Quintana et al., 2015). Informal institutions such as cooperatives, self-help groups (SHGs) and other microcredit initiatives can also improve access to finance. Similarly, social protection policies could reduce vulnerability, help recover from livelihood and income losses caused by extreme weather events, as well as increase opportunities for investments in resilient livelihoods and adaptation strategies as they release financial pressure from consumption needs (Davies et al., 2008). In Brooks et al. model (2005) the authors' approach to adaptive capacity emphasises generic capacity from the standpoint of vulnerability and sensitivity reduction. They therefore deem development indicators of key importance. Social capital is increasingly considered a critical determinant of adaptive capacity (Adger, 2003; Pelling & High, 2005), especially when human capital is low and governance is weak (Tol & Yohe, 2007). Tol and Yohe (2007) observed a relationship between social and human capitals and governance that points to the interdependent nature of these components of adaptive capacity. Social capital refers to the intangible resources made of social relationships and social networks that play a key role in individual and collective action (Adger, 2003; Rivera et al., 2019). One of the first definitions of social capital was that of Bourdieu who defines the concept as *"the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance or recognition"* (Bourdieu, 1985:248). Social capital is rooted in the social structure within which the actor is located and, like other capitals, is an asset into which resources can be invested with the expectation to yield future benefits in the form of information and communication, trust, mutual-help etc. (Adler & Kwon, 2002). Unlike financial capital, social capital needs maintenance. Social bonds need to be nurtured and renewed in order maintain their efficacy (Ibid.). In the context of climate adaptation, social capital is seen as a resource on which other forms of capital can be developed and improved to enhance adaptive capacity and resilience (Agnitsch et al., 2006; Carmen et al., 2022). It should however be noted that while social capital can contribute to strengthen people's adaptive capacity to climate change, it

could also reinforce socio-economic exclusion therefore increase the vulnerability of certain groups (Adhikari & Goldey, 2010; Wilshusen, 2009).

As noted before, adaptive capacity is a dynamic process, yet there is little understanding of how the different determinants interact with each other. Assessment frameworks that draw on the SLF have been criticized for failing to show interrelations between capitals and for depicting adaptive capacity as static and homogenous (De Haan, 2012; Jiao & Moinuddin, 2015; Small, 2007).

A more recent stream of adaptation research has challenged theory-driven and top-down capacity assessments by proposing approaches that also attempt to capture less tangible aspects of adaptive capacity (i.e. cultural ties, power relations, cognitive factors), and to provide nuanced understandings of capacities, barriers and determinants (Carr & Thompson, 2014; Kuruppu & Liverman, 2011; Mortreux & Barnett, 2017; Thompson-hall et al., 2016; Toole et al., 2016). Attention has been raised on the need to develop tools that are able to grasp the heterogeneity of adaptation needs and capacities, and therefore to grasp the diversity of local realities as well as subjective views (Jones & Tanner, 2017; Matin & Taylor, 2015). Such understandings can also enable the capture of those socio-cognitive aspects that influence the ability to mobilize capacities into adaptation and to generate empirical evidence of adaptive capacity at the local level (Jiao & Moinuddin, 2015; Van Aalst et al., 2008). Finally, a growing body of literature points to the importance of addressing questions of social differentiation, since determinants and barriers to adaptation are likely to differ between and within social groups and are profoundly shaped by social identities and power dynamics (Frank et al., 2011; Kaijser & Kronsell, 2014; Rao, 2019b; Thompson-hall et al., 2016). The concept of intersectionality, which is discussed later in this chapter, has gradually found space in the climate adaptation literature, raising awareness about the importance of critically understanding the differentiated nature of vulnerability, adaptive capacity and adaptation (Carr & Thompson, 2014; Kaijser & Kronsell, 2014; Ravera et al., 2016). The interplay of multiple identities (i.e. gender, caste, class, age) and dimensions of social and power relations shape people's opportunities and barriers to adaptation.

Whilst there is a recognition that traditional assets-based approaches are inadequate to fully assess adaptive capacity, it remains an open question as to how to generate tools able to measure socially differentiated determinants in a process-based fashion. Challenges that

remain ahead include addressing issues of scale – from local to national – and finding ways to assess the interaction of determinants playing at different levels (Brooks, 2003; Engle, 2011; Smit & Wandel, 2006; Vincent, 2007); enabling measurements of factors of various natures (i.e. assets, resources; power and cognition) and systematizing the adoption of intersectionality as lens of analysis (Ravera et al., 2016). Experimental applications are needed to inform these methodological discussions and improve understandings of differentiated adaptive capacity that draw from empirical knowledge (Cohen et al., 2016; Ravera et al., 2016).

2.3 The climate-migration debate

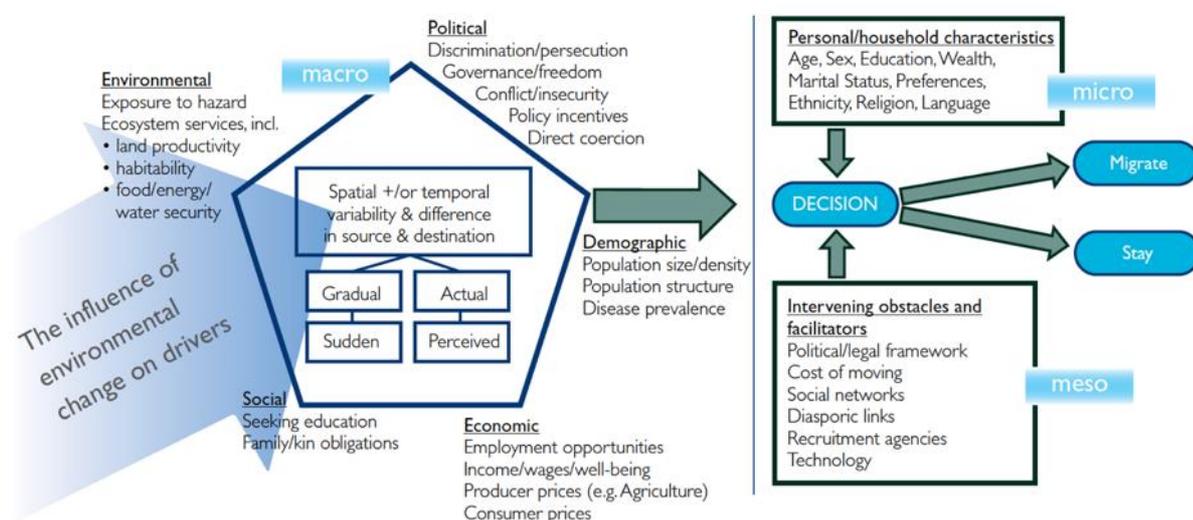
The climate-migration debate has drawn increasing attention in recent years, both in academic and policy circles. With the impacts of climate change increasing in frequency and magnitude (IPCC, 2018), there is high political interest in understanding, categorizing and quantifying climate-related migration (Stapleton et al., 2017). The initial discourses on the climate-migration nexus were led by environmental scientists and ecologists and had a strong focus on predicting future numbers of population displaced by environmental issues (see Myers, 1995, 2005; Unruh et al., 2004). In a now highly controversial piece of research Myers (2005) predicted that by 2050 over 200 million people could be displaced by the impacts of climate change. This first wave of environmental migration scholarship coined the notion of *environmental refugee paradigm*, which was rapidly embraced by policy-makers interested in the implications of environmental change for international security (McLeman et al., 2016).

Migration scholars engaged relatively late with the climate-migration debate, but they soon cautioned against alarmist projections and criticised the simplistic cause-effect approach that was being used. Although it is established that environmental factors influence human migration, there is broad agreement regarding the need to consider this relationship in its complexity and to avoid causal interpretations (Black et al., 2011; Marchiori & Schumacher, 2011; McLeman et al., 2016; Piguet & Laczko, 2012).

In 2011, in a major research initiative to conceptualise the relationship between environmental change and migration, the UK Government Office for Science commissioned a study by Richard Black and colleagues (2011) to develop a conceptual framework that could move away from deterministic approaches (Foresight, 2011). The Foresight's

framework (Figure 1), which remains one of the reference frameworks in the climate-migration literature, argues that migration decisions are influenced by a wide range of climatic and non-climatic factors. Drawing on migration discussions about the complexity of migration decision-making and the role played by a multitude of drivers (see Massey *et al.*, 1999; De Haas, 2010; Castles, 2011), the Foresight report seeks to highlight the multicausal nature of the climate-migration relationship. It concludes that climate change should be considered a magnifier of existing factors influencing the decision to migrate and that focusing on environmental risk as principal driver is problematic and misleading.

Figure 1. Conceptual framework showing migration drivers and the influence of environmental change



Source: (Foresight, 2011:2)

The framework clusters the drivers of migration in five categories resembling the SLF approach discussed earlier in this chapter recognizing that these five dimensions vary spatially and temporally. Environmental change is seen as influencing these factors, for example by eroding livelihoods and natural resources, hence indirectly shaping migration decision-making. A novelty brought by the framework is that it integrates the notion of agency in the climate-migration debate departing from the initial approaches which suggested that all people affected by climate change would migrate or be displaced. It is argued that climate change could exacerbate the vulnerability of the poorest and most marginalised to the extent that they will be deprived of the possibility to migrate and they will be 'trapped' in hazardous places with fewer adaptation options (Black *et al.*, 2011, 2013; Black & Collyer, 2014).

The concept of vulnerability is at the core of the framework. However some have pointed out that it has not been fully explored (Adams, 2016; McLeman et al., 2016), being reduced to assets accumulation and erosion (Felli & Castree, 2012). Issues related to power and subjective well-being are overlooked both in the framework and the climate-migration debate in general. As argued by Felli and Castree (2012) social actors are portrayed as having the ‘same interests, rationality and aspirations’. Yet, empirical studies on place attachment show that people may voluntarily decide to stay in places highly exposed (Adams, 2016; Mortreux & Barnett, 2009). The proliferation of agent-based models that have sought to capture the multicausal and non-linear nature of the environmental change and migration interlinkages (Kniveton et al., 2012; Laczko & Aghazarm, 2009), neglects the importance of socio-cultural and behavioural factors and risks oversimplifying complex realities (Bardsley & Hugo, 2010; Piguet, 2012).

A final remark on the Foresight report which, despite its limitations, signalled a breakthrough in the climate-migration discourse, is that it shifted the pessimistic view of migration as failure to adapt in situ by introducing the concept of migration as adaptation. This work embraces this notion and seeks to disentangle the migration-adaptation nexus, as discussed in the next sections and chapters.

2.3.1 Migration patterns in the context of vulnerability and multiple climate hazards

In the climate-migration nexus we need to consider that certain migration types are related to certain environmental risks. For instance, some empirical studies have observed that sudden-onset hazards, such as flooding, are related to temporary and short-distance (mainly internal) migration (UNISDR, 2009). By contrast, gradual environmental changes and repeated slow-onset events, like prolonged heat or changes in rainfall patterns, allow people more time to assess the options and decide how and where to migrate. In this context, migration tends to be longer-term and longer-distance (McLeman, 2011; Stapleton et al., 2017). Nevertheless, migration can begin as temporary and become permanent, or start as internal and progress to international (FAO, 2018; Laczko & Aghazarm, 2009; Mueller et al., 2014). As such it has to be understood in a continuum, and as a process, rather than as an isolated event from point A to point B and back.

It is not only the type of hazard to which people are exposed that can influence migration patterns, but also (and perhaps mostly) the underlying vulnerability and capacity contexts. For instance, Stapleton et al. (2017) highlighted that when vulnerability is high and capacity is low people may remain displaced for months and even years. The susceptibility to be displaced by climate hazards is mediated by a wide range of interlinked socio-economic and cultural factors (Stapleton et al., 2017). Vulnerability and capacity are therefore two central concepts of the climate-migration nexus, as they shape the options people have to move, stay or return.

Vulnerability is a multidimensional concept. It goes beyond the material dimension, necessitating the consideration of social differentiation and power structures in which climate-migration processes are embedded. Even within the same context, there may be a variety of responses due to different levels of vulnerability among and within social groups. In their study, Laczko and Agharzam (2009) point to gender, race, ethnicity, class, age and housing as the main factors that influence migration responses in natural disaster contexts. They notice that race and ethnicity can be linked to housing quality and location; both critical in terms of sensitivity and exposure to climate hazards. 'Race' and ethnicity shape access to economic resources and social marginalisation. For instance, Stapleton et al. (2017) highlight that low-income ethnic minorities are less likely to own a house and tend to live in poor quality buildings, which are less able to withstand disasters. This, they argue, could suggest that they are potentially more likely to migrate or be displaced in the occurrence of a climate hazard. Conversely, Elliott and Pais (2006) study shows that during hurricane Katrina in the US, low-income African Americans were unable to evacuate. They attribute such behaviour to a variety of socio-economic factors (i.e. lack of personal transport, lack of networks etc.) which in turn were shaped by racialised marginalisation and class, ultimately determining who had the resources to leave and who did not.

Gender is another marker of social differentiation that emerges as critical in this context. Women are disproportionately affected by climate hazards due to unequal exposure to risk and unequal access to opportunities mostly deriving from socially constructed vulnerabilities (Neumayer & Plumpert, 2007). In certain contexts, migration is not an option for women due to context-specific gender roles and social norms. The causes for gender differentiated mobility are to be found in the broader landscape of gender inequalities, as well as in the societal norms that conventionally restrict women's movement, especially in male-

dominated societies. These aspects will be further discussed later in this thesis. What is relevant to note at this point is that gender can be a discriminant in the climate-migration relationship. For instance, male migration can undermine women's recovery from natural disasters. Women 'left behind' often face increased responsibilities that may conflict with disaster response tasks (i.e. rebuilding the livelihood activities, dealing with house damages etc.) in addition to the burden of being victims or survivors themselves (Neumayer & Plumpert, 2007). On the other hand, women who have been displaced or migrate post-disaster are often exposed to greater risk of sexual and gender-based violence, trafficking and exploitation (Enarson, 2000). Although not exhaustive, the above discussion demonstrates that the climate-migration nexus should be understood within contexts of vulnerability and inequality.⁴

2.3.2 Migration as adaptation

Over the last few years, the climate-migration debate has extended to integrate discussions on the role of migration as a form of adaptation to climate change. The 'migration as adaptation' paradigm traces its roots in migration studies where mobility has long been considered an integral part of multi-local livelihood strategies (Chindarkar, 2012; Enarson, 2000). In the *New Economics of Labour Migration (NELM)* theory, migration is described as a risk-spreading strategy with the potential, under certain conditions, to secure and eventually improve households' livelihoods (Sakdapolrak et al., 2015). Throughout human history migration has been commonly undertaken by households to cope with natural climate variability (De Haas, 2010). For rural populations temporary labour migration has long been an important livelihood strategy to adapt to the seasonality of agriculture and to variations in climate patterns (Afifi et al., 2015).

Under the migration as adaptation perspective, origin communities and migrants are characterised as active agents of social resilience, a novel take on the climate-migration debates that predominantly consider migrants as victims of climate change. A number of studies have discussed migration's potential to enhance resilience and adaptation to climate stresses and shocks through the impact of remittances on household income and livelihood diversification (Etzold et al., 2014). The positive effects of social and financial remittances

⁴ Inequality can be broadly defined as 'differences among people in their command over social and economic resources' (Osberg, 2001:7371). In this study the term 'inequality' refers to its comprehensive notion that encompasses various dimensions, including inequality of income, wealth, opportunity, wellbeing, power, capabilities etc. Multidimensional inequality recognizes the importance of non-income dimensions and the strong linkages between inequality and wellbeing (Decancq et al., 2009).

could, for example, contribute to enhance adaptation and adaptive capacity (Adger et al., 2015; Bardsley & Hugo, 2010; Barnett & Webber, 2010; Gemenne & Blocher, 2016; Tacoli, 2009; Warner & Afifi, 2014). Remittances, especially in poor rural areas, have played a vital role in alleviating poverty (Gioli et al., 2014). In the context of climate change, remittances can be critical to mitigate the impacts of extreme weather events – for example by playing the role of informal safety nets – or they can allow households to undertake preventative measures to reduce sensitivity to climate stresses – for example, building more resistant houses or strengthening livelihoods resilience (Adger et al., 2002; Gubert, 2002; Barnett and Webber, 2010; Gioli et al., 2016). Tacoli (2009: 513) stresses that “[...] *mobility and migration are key responses to environmental and non-environmental transformation and pressures. They should therefore be a central element of strategies of adaptation to climate change*”. Similarly, some authors argue that remittances can positively contribute to the adaptive capacity of those who stay behind through wealth gains and stronger social networks (Adger et al., 2002; Barnett & Webber, 2010; Gubert, 2002).

However, the predominant focus on material assets and economic assessments has overlooked social impacts of migration, not least changes in household structures such as composition, redistribution of roles and responsibilities, and shifts in power dynamics and inequalities (McLeman et al., 2016; Singh, 2019). This thesis seeks to unpack such changes, so as to understand how migration can be an adaptation strategy, and for whom. For instance, some studies argue that under certain conditions migration could lead to risk concentration rather than diversification (McLeman et al., 2016; Wrathall & Suckall, 2015). Remittances can create dependency patterns that could increase risk and vulnerability if, for example, they are not sent on a regular basis (De Haas, 2005). At community level, remittances can increase inequality between migrant and non-migrant sending households affecting community cohesion and social capital that, as noted before, are crucial components of adaptive capacity. Singh (2019) points out that reduced community cohesion can affect collective local adaptation, for example by lowering interest in protecting common natural resources, hence enhance vulnerability over the long-term. On the use of remittances and environmental sustainability, Adger and colleagues (2002) observe that remittances could be used for unsustainable activities and technologies which can further deplete natural resources and increase sensitivity to environmental risks. The tendency to assume that remittances should be used strategically underlies most of the discourses on

migration as adaptation. However, the way remittances are used is influenced by a myriad of intersecting factors including perceptions, hopes, norms and values (De Haas, 2005).

In the absence of frameworks to assess the role of migration in climate adaptation, some scholars argue that to be considered a 'successful' adaptation strategy migration should increase, and not erode, the existing adaptive capacity of the sending and hosting communities, and of the migrants themselves (Tacoli, 2009). In their case studies in Ghana and Tanzania, Warner and Afifi (2014) found migration to be a detrimental coping strategy for both the migrants and their household of origin, especially for those with worse socio-economic conditions pre-migration. Having to repay the initial debt contracted to migrate and being unable to send regular remittances, was pushing these households into further poverty. Pre-migration conditions are key to determining the outcome of migration hence its effects on adaptation. In Mosse and colleagues' study in India (2002), while in better-off households remittances led to assets accumulation and helped to manage risk, for poor food-insecure households remittances were mainly used to repay debts and increased dependency. Moreover, migration resulted in a significant negative social impact for the migrants who were not able to participate in festivals, such as Holi and Diwali, which are usually an opportunity to define membership in the community. As argued by the authors, their absence in these important social events could increase their social marginalisation (Mosse et al., 2002). In cultures where retaining a social position is critical to obtain credit and access to community activities, losing it is seen as disruptive and could negatively impact people's capacity to adapt.

The migration as adaptation discourse has met with criticism from scholars, arguing that it promotes a neo-liberal narrative shifting the responsibility from states to the migrants and their households (Mosse et al., 2002). Felli and Castree (2012) point out that the Foresight framework (section 2.3) portrays the migrants as 'adaptable subjects', overemphasizing individual and community level responses to environmental degradation (migration as adaptation) while remaining silent on the role of political and economic transformations needed to mitigate the impacts of climate change. In this context, Sakdapolrak et al. (2015) highlight that a narrow focus on households and individuals neglects structural constraints. They argue that understandings of the climate-migration nexus at household and individual level should consider the embeddedness of these processes within broader social and ecological contexts.

To conclude, migration offers both challenges and opportunities beyond and within the framework of climate adaptation. This thesis argues that adaptation is not a zero-sum game. As such, beyond questioning whether migration enhances adaptive capacity, it seems even more critical to understand whose capacity is enhanced and to what. Who gains and who loses from the migration-adaptation interlinkages is context-specific. Considering social differentiation and power structures in which both migration and adaptation are embedded is essential in order to progress towards that understanding.

2.3.3 Migration and social change: the 'left-behind'

In general, migration research on the left-behind has largely focused on economic welfare, health and material well-being, failing to fully explore the very experience of being left behind and the social cost of out-migration (Toyota et al., 2007). As Toyota and colleagues point out *"the left behind are no longer the same villagers as they were before"* (Toyota et al., 2007: 157) referring to the deep and ever-changing transformation that migration mutually has on both the migrants and the members of the family who remain in the sending areas.

Nevertheless, literature is increasingly looking at social, physical, psychological, as well as economic outcomes of migration (Nguyen et al., 2006; Nightingale, 2011; Gioli et al., 2014; Nguyen and Locke, 2014; Rao, 2014; Singh, 2019). For example, migration could open up opportunities for reducing power imbalances and gender inequalities, or exacerbate existing vulnerabilities and reinforce forms of oppression. It may be expected, and it is often assumed, that in the absence of their husband, women increase their decision-making power and involvement in activities from which they are usually excluded. While this could be the case in some households and contexts, when women live with extended family (often in-laws), their opportunities to benefit from freedom and responsibilities are significantly reduced (De Haas, 2005). Gulati's study in India (1993) shows that the women left behind by migrating husbands living in extended families were subject to strict supervision, less mobility and rigid norms. They did not manage any aspect of the remittances, had to ask for permission from their mother-in-law to leave the house, and lamented not having their husbands to mediate between them and the extended family. The same study also stressed the problem of 'dependency', as left behind wives had to rely on fathers in-law or brothers in-law for any activity outside the community (i.e. going to the market, the health centre etc.) or to fulfil social obligations (Gulati, 1993).

In their study on migration in Nepal, Gartaula and colleagues (2012) differentiate between subjective and objective well-being, describing objective well-being as referring to the basic human needs required for a good life, and subjective well-being as being based on people's perception of their quality of life, which is socially and culturally influenced. The authors point out that male outmigration can have positive effects on women's *objective* well-being – because it increases income through remittances, economic status and material gains – but negative impacts on their *subjective* well-being in terms of psychological stress and emotional dependence on the extended family members they often live with. Similarly to Gartaula et al.'s study, Gulati (1993) noticed that, whilst the migrants' wives who live in extended families have less autonomy and bargaining power, those who become heads of the household experience more freedom and take responsibility for key decisions. Yet, having more responsibility can be perceived by the women as adding stress and workload instead of increasing power (Gulati, 1993; Jacka, 2012; McKenzie & Menjivar, 2011). Although in general women's involvement in decision-making is portrayed as a positive sign of empowerment, in some contexts it can result in severe mental stress especially in male-dominated societies where women have no formal education and are less exposed to the outside world (Roy & Nangia, 2005). Psychological struggle, depression and feelings of loneliness were found to be common traits in the wives of migrants in Roy and Nangia's (2002) study in Bihar, India.

Shifting identities and perceptions of social roles are some of the transformative effects that migration can bring about. The diversity of migration outcomes on those left behind raises the compelling question of why some women benefit from more freedom and decision-making power in their husband's absence while others do not. At the same time, it challenges the assumption, often underlying migration-adaptation studies, that increased decision-making power is inherently positive under all conditions and in every context.

Understanding the multilevel interactions between mobility, power, agency and social identities requires a comprehensive approach that surpasses simplistic economic analyses of remittances and development in the home communities. To grasp the complex relationship between migration and adaptation, it is necessary to investigate which social groups benefit the most from mobility, as well as how the differentiated effects of migration interact with the determinants and constraints of adaptive capacity. To avoid the risk of

considering men and women as homogenous and disconnected social categories, we also need to unpack and scrutinize the way gender norms and social identities interact so as to shed light on the interplay of gender norms and social identities.

A final remark is that, while 'the left-behind' as a phrase signifies 'immobility' or even passivity, this is hardly the case. While 'immobility' can be forced onto individuals for a variety of reasons, those who stay behind in areas of origin may actively choose to do so. In both scenarios, they are key enablers of migration of others (e.g. women remain behind to look after the family, allowing men to migrate). In line with Biao's (2007) assertion, therefore, immobility, like mobility, should be analysed along a much broader forced vs. voluntary continuum.

Changes in household configurations (Gartaula et al., 2012; Hagen-zanker et al., 2014; Siddiqui, 2012), can result in differentiated impacts on adaptation and risk management (Singh, 2019), but these issues are under-researched in the climate-migration nexus. Concepts of translocality (Brickell & Datta, 2011; Sakdapolrak et al., 2015) and socio-spatial vulnerability (Etzold & Sakdapolrak, 2016) point to the interconnectedness of places of origin and destination of migrants and compel further understanding of vulnerability within these fluid and mutually shaping processes. Migration as adaptation discourses tend to undertake location specific analyses that disregard the interlinkages of spaces (Sakdapolrak et al., 2015). However, it is by connecting spaces, ideas and experiences, migration shapes power structures (Rao, 2014a) hence people's vulnerability and social resilience.

2.3.4 Migration in India: Caste, class and gender intersections

In early migration studies, women and gender relations, were almost invisible. Until the 1980s most of migration literature was largely gender-blind and dominated by the assumptions that women migrated only as family dependants and that most migrants were men (King et al., 2005). This view portrayed women as passive actors of migration processes. Gradually, the study of gender has evolved from a narrow focus on women migrants to a more interdisciplinary women-centred approach that has, in turn, shifted from binary paradigms and accent on 'women' to a broader emphasis on gender and identities (Ibid.).

As will be discussed later in this thesis, gender is intended in its most comprehensive conceptualisation that encompasses multiple intersecting identities. In India, caste, ethnicity

and gender - among other markers of inequality – differentiate both the experience of migration and its outcomes, in context-specific ways. Borooah et al. (2014) point out that inequality and poverty in India cannot be understood outside the context of the caste system and they highlight the correlation that exists between poverty and social position – with Scheduled Castes (SC) at the very bottom of the social ladder representing the poorest and most vulnerable groups.⁵ An in-depth analysis of the interactions between migration and these social categories shows an even more complex landscape. For instance, among upper-castes in West Bengal, manual work for women is considered a sign of low status and is socially unacceptable (Rogaly, 2010). For upper-caste women, migrating and being employed in manual work activities could bring shame on the whole caste group, which often leads to exclusion and marginalisation of the specific household. Conversely, poorer and lower caste households cannot afford to exclude women from wage work, and so are prompted to re-negotiate gender norms. In West Bengal many men and women seasonal migrants are *Adivasis*.⁶ Economic conditions only partially explain who migrates. Worse-off households that belong to the lowest castes could potentially benefit from opportunities that open up by migration to transform caste boundaries and gender relations more than educated higher-caste households. Rogaly (2010) observed cross-caste alliances between migrants in the destination areas, who co-operated to negotiate wages and deals with their patrons. In terms of gender, women’s decision-making power appeared to be greater when women migrated in female groups rather than with family members. Tensions between men and women emerged, especially when wives were left behind in the home villages and male members of the family (i.e. fathers, uncles, sons, cousins) were competing for influence over the household. Ways in which gender and power relations can be investigated further are presented in the next section.

2.4 Conceptualizing gender and intersectionality

Gender relates to the socially constructed relationships between men and women and the underlying power dynamics that build and maintain these relationships. As Carver (1996:4) points out “*gender is not synonym for women*” but it refers rather to “*socially learned*

⁵ The caste system can be divided into four subgroups: *Brahmins* who represent the highest caste and were traditionally priests and teachers; *Kshatriyas* traditionally the warriors and rulers; *Vaisyas* traditionally moneylenders and traders and the *Sudras* the lowest caste of the Hindu caste system. Finally, there are those groups that do not belong to any of those classes and are regarded as the ‘untouchable’ meaning that physical contact with them is polluting. Indian untouchable castes are among the most marginalized and bear the social stigma of being considered at the very bottom of the social ladder. In the Indian constitution, the untouchable are referred to as ‘Scheduled Castes’ (Borooah et al. 2014).

⁶ *Adivasis* is the collective name used for indigenous people in India. *Adivasis* are a homogenous group varying in ethnicity and culture, referred to as Scheduled Tribes (ST) in the Indian constitution. They are usually among the poorest and most marginalized groups.

behaviours and expectations that are associated with the proscribed gender roles of masculinity and femininity". Momsen (Momsen 2009:2) defines gender as "the socially acquired notion of masculinity and femininity by which men and women are identified". As such, gender is not the same as sex – typically defined as the distinctive biological and anatomical traits ascribed to men's and women's bodies – since it seems to be more about the divisions and power relations that are constructed around sexuality (Carver, 1996; Hoogensen & Rottem, 2004). Gender analyses that only focus on binary sex difference may therefore fail to understand the power structures that determine inequality and privilege, which lie at the intersection of multiple identities – some of them are 'chosen' (e.g. marital status), while others are assigned at birth (e.g. race). Understanding gender as a social construction recognises that it does not have a fixed meaning, since beliefs, norms, cultural behaviours, historical context and political structures change from one society to another and over time. Similarly, relationships of dominance and subordination are not unchangeable but continuously challenged by women's and men's agency.

This perspective of gender as a socially constructed and heterogenous category is fully embraced and further expanded in the notion of intersectionality. The concept of intersectionality was first introduced in the 1980s by the Black feminist movement, which challenged the use of 'women' as unified homogenous category, arguing that explaining gender inequalities through a single framework was not only limiting but also misleading, as it portrayed the concerns of middle-class White American feminists as universal (Brah & Phoenix, 2004; Mohanty, 1998). Similarly critiques of gender and race research pointed out at the time that the two disciplines tended to work in silos. For instance, gender studies focused almost uniquely on White women and race studies on Black men, limiting understandings of Black women's experience (Mccall, 2005). Crenshaw (1991) was one of the first scholars to articulate the notion of intersectionality, pointing out that a discussion that only focuses on gender, race and ethnicity as separate categories fails to capture the complexity of inequality. Intersectionality is therefore suggested as a conceptual framework through which it is possible to understand these categories as interconnected and interdependent, rather than separate. Theories of intersectionality contend that inequality arises from the interplay of different forms of oppression and it cannot be understood through a single category (Bastia, 2014).

Intersectional frameworks thus reject the notion of race, class and gender as separate identities and seek to describe the hidden intersection of multiple discriminations. Shields (2008) highlights that social identities *mutually constitute, reinforce* and *naturalize* each other meaning, respectively, that: every category is shaped in relation to others; the formation of identities is a dynamic process in which individuals are not passive recipients of their identities and are continuously informed by other categories; and finally that identities in one category could be seen as 'self-evident' through the lens of other categories. Individuals act and behave in complex systems within entrenched social norms. They are, in fact, socially labelled with titles (such as woman, mother, father, Black, gay etc.) that embody a set of norms which implicitly regulate their action and behaviour (Villa, 2011). Norms are difficult to read since they are often implicit and normalized by the system (Butler, 2004) and are embedded into social categories which themselves reflect social structures of inequalities and difference. Individuals act as someone. They act as a man, a woman, a wife, a widow etc., and they internalize the intersections of several identities (ibid.). Intersectionality as an approach, attempts to delve into this complexity to investigate the structural causes of inequality and understand the processes from which it arises. The empirical application of intersectionality and its challenges are further discussed in Chapter 3.

2.4.1 The invisibility of privilege: intersectionality, space and power

The relationships among social groups contain and produce inequalities (Mccall, 2005) but social divisions tend to be invisible and difficult to identify. They are rooted in social systems, deeply interlocked into power dynamics and originate from concurring intersections of identities. Furthermore, social categories act simultaneously on different levels in what Hull and colleagues call 'simultaneity of oppression' (Brewer et al., 2002; Hull et al., 1982). These categories take on different meanings depending on their intersection, which vary over time and from place to place. Understanding the social context is pivotal to those studies that use intersectionality as a lens to investigate inequalities. As pointed out earlier, gender cannot be detached from the socio-cultural and political conditions in which it is produced and shaped (Butler, 1990). Valentine (2007) stresses the significance of space where power relations and inequalities are produced, and calls for researchers to re-engage with these questions. Social identities are, in fact, inextricably bounded to the context (space) and constrained or enabled by power relations into which they are embedded. Context-dependency is a crucial characteristic of intersectionality (Bürkner, 2012), as is fluidity

(identities and inequalities are continuously shaped and reproduced in social relations, thus temporally-specific). Structural inequalities act simultaneously across multiple dimensions. The same act could be the expression of more than one dimension of power. For example, it could be an expression of norms internalized by the subject (Nightingale, 2011), while being at the same time influenced by power hierarchies acting at a different level (household, the community, workplace etc). Multidimensional understandings of inequality emphasize the relational nature of many layers of power dynamics (micro, meso, macro levels) recognizing that privilege and oppression do not only result from the intersection of social categories but are contingent on these multiscale interactions. It is, therefore, critical to acknowledge that intersectionality is spatially constituted, temporally bounded and highly and heavily entrenched in power structures operating at multiple levels.

2.4.2 Gender and environment

The study of the relationship between women and the environment has a long-standing tradition that traces its roots in the 1980s when ecofeminist thinkers and activists from around the world emphasised women's 'special' connection with nature. At first, women were framed as victims of environmental change and then saviours of the environment, thus best allies in resource conservation initiatives (Leach, 2007). In the work of early ecofeminist theorists, the women-nature connection was portrayed as substantially related to biological and inherent traits, thus disconnected from social and geographical contexts (Merchant, 1996; Mies & Shiva, 1993; Salleh, 1997). The ecofeminist perspective of women and environment is grounded on the idea that because women care for humans through their nurturing and reproductive roles, they also care for the environment on which life is dependent. The associated assumption is that women are better carers than men (Mies & Shiva, 1993) and have innate higher moral and civic values. Therefore, their unique relationship with nature should be celebrated and privileged because it could bring caring values into the dominant materialistic and environmentally unsustainable ways of living.

Feminist environmentalists and political ecologists challenged the ecofeminist care ethic pointing out the relevance of socio-cultural, economic and historical factors in determining power relations and division of labour and, in turn, also women's relationship with nature (Agarwal, 1992, 1998; Rocheleau et al., 1996). New ecological, social and economic reformulations led to renewed perspectives on feminism and ecology (see Warren, 1987; Cuomo, 1998). The universalisation of the ecofeminist woman-nature link, that tended to

conflate women into a unified category and gender into 'men versus women', was criticised for failing to recognize both ideological and material diversity among women, as well as excluding men from the discourse (Jackson, 1993; Rocheleau et al., 1996).

Current work on gender and environment has moved past simplistic ecofeminist views, yet gender is still prevalently approached through gender-as-difference frameworks that hide the issues of power and social identity earlier discussed (Carr & Thompson, 2014; Djoudi et al., 2016; Kaijser & Kronsell, 2014; Rao, 2019b; Ravera et al., 2016). Gender is seen in isolation from the context in which inequalities are produced and disconnected from the social, economic and power structures in which it is embedded. As a result, gender and adaptation discourses tend to reinforce stereotypes, generally revolving around two broad themes (Arora-Jonsson, 2011; Djoudi et al., 2016; N. Rao et al., 2020). A first narrative sees women as victims of climate change whose capacity is constrained by their social roles as carers and their dependency on men - hence particularly vulnerable and in need of special attention and 'support'. The second narrative overemphasizes women's agency and virtue to address environmental issues in a similar vein to ecofeminist discourses. Both narratives mask differences, blending 'all' women into two macro categories of 'most vulnerable' or 'environmental heroes'.

More recently, an increasing number of scholars are calling for more nuanced understandings and analysis of gender in climate change studies and pointing to the benefits of using feminist intersectional approaches (Carr & Thompson, 2014; Djoudi et al., 2016; Nightingale, 2011; Onta & Resurreccion, 2011; Rao, 2019; Rao et al., 2020; Ravera et al., 2016; Thompson-hall et al., 2016). When scrutinized through the lens of intersectionality, vulnerabilities and capacities emerge as being shaped by a myriad of factors that could not be solely ascribable the categories 'men' and 'women'. For example, Onta and Resurreccion's (2011) study in Nepal shows that adaptive capacity is moulded through intersections of gender and caste and that certain adaptation processes can push caste and gender boundaries encouraging positive changes towards equality. In Odisha, Ray-Bennett (2009) pointed out that women's vulnerability to multiple disasters is mediated by a complex interplay of caste, class and gender. Djoudi and Brockhaus (2011) emphasize similar patterns. In their study in Mali with forest-dependent communities, they found that women from the most disadvantaged groups were less affected by the impacts of drought compared

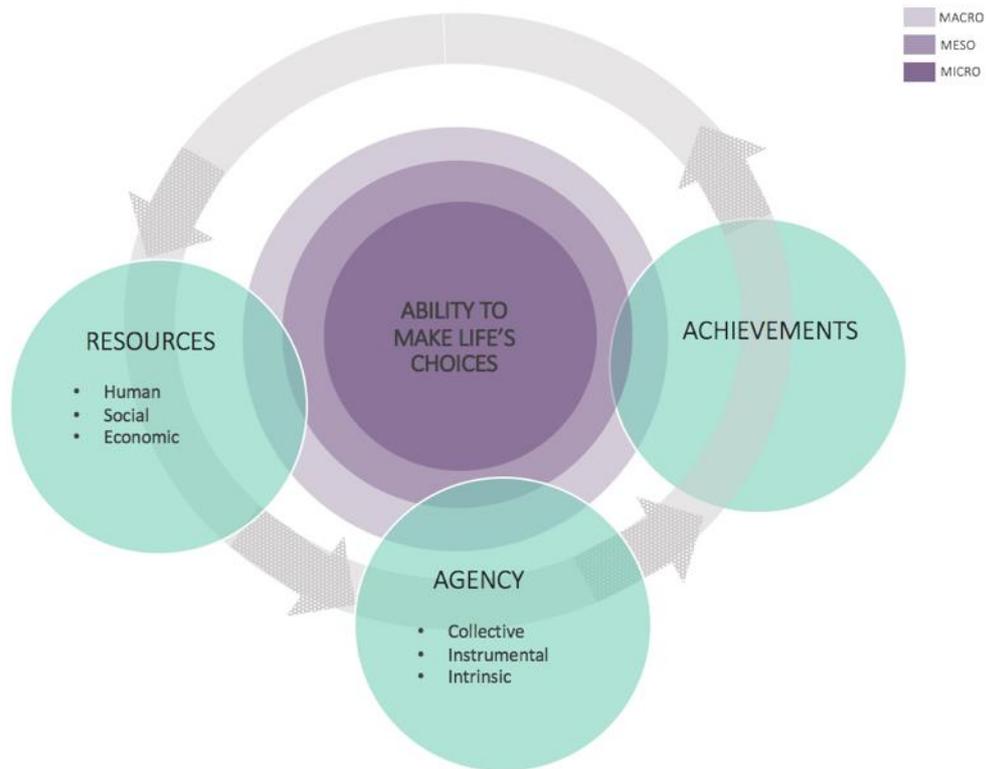
to women from higher social class who were restricted in their mobility and in the adaptation activities they could engage with.

This thesis follows in this vein, aiming to provide a deeper understanding of these complex dynamics and vulnerability patterns, so as to highlight how adaptation responses can be inclusive and equitable.

2.4.3 Understanding gender through the multiple dimensions of empowerment

Making sense of gender demands a contextual understanding of dominant norms and ideologies within the domestic and public realms, and of how these result in multi-layered forms of inequality, shaping 'one's ability to make choices'. Homogenised understandings of gender only provide partial views. This is even more so in the context of India where strong defining identities, such as caste and gender, coexist and are further complicated by complex interrelations with age, kinship, marital status and class, intervening at multiple levels of society. Women's empowerment does not have a unique definition. Choice, freedom, capabilities, autonomy and agency are some of the defining terms used to describe it (Gammage et al., 2016; Kabeer, 1999; Mishra & Tripathi, 2011; Sen, 1999). While each definition is nuanced, they all gravitate around the broad notion of being able and free to make meaningful decisions about one's own life. Drawing on Kabeer's conceptualisation of empowerment (Kabeer, 1999), Figure 2 visualises the interdependent dimensions of this framework.

Figure 2. Interdependent dimensions of empowerment



Source: Author's elaboration drawing from Kabeer's theory (1999, 2001)

Defined as the ability to make 'strategic life's choices' (Kabeer, 1999), empowerment, consists of three interdependent dimensions, namely resources, agency and achievements, which operate across micro, meso and macro levels.

Resources refer to material and non-material capitals: human, social and economic pre-conditions needed to exercise choice and to 'bargain one's preferred outcome' (Gamage et al., 2016). Resources include access and control over productive and non-productive assets (i.e. land, information, housing, income earnings), education, skills and social networks. Availability, access and distribution of resources are strongly influenced by norms and rules, which act as enablers and barriers along the lines of gender, class, caste and other social divisions.⁷

⁷ The distinction between norms and rules here follows the definition given by Folbre (1994) who describes *rules* as those having official status and enforced by laws (i.e. property rights, inheritance laws) and *norms* as those entrenched into social institutions and culture determining social and moral appropriate behaviour, obligations and responsibilities. Norms can be extremely powerful in maintaining the status quo and preventing the effective implementation of rules.

Resources are instrumental to agency since they constitute the pre-conditions under which the latter is exercised. *Agency* is in turn, broadly considered as the capacity to act upon one's desired choice; the quintessence of empowerment, as argued by some (Mishra & Tripathi, 2011). In the analysis that follows, agency encompasses the three dimensions of collective (power with), instrumental (power to) and intrinsic (power within). Collective agency refers to collective action of marginalised or oppressed groups to defy and renegotiate norms. Women's participation in collective groups such as cooperatives, self-help groups (SHGs) or even social movements can trigger changes in gender relations and challenge norms (Agarwal, 1997; Gammage et al., 2016). The strength of collective agency is that it amplifies voice while mitigating the cost of acting alone to challenge patriarchal structures. Instrumental agency refers to the ability to pursue a choice and act on it even when facing others' opposition (Kabeer, 1999). In its negative connotation, it can become a form of 'power over' - when one's agency is exercised at the expenses of others through forms of coercion, violence and authority.

Finally, intrinsic agency is one of the most important facets of empowerment yet overlooked in earlier literature. Also called 'sense of agency' (Kabeer, 1999:438), it is the less tangible form of agency because it refers to cognitive processes around worthiness, motivation and value that individuals attribute to the act of choosing (Alkire, 2007; Ibrahim & Alkire, 2007; Kabeer, 1999, 2008). Intrinsic agency is of particular importance for at least two reasons. Firstly, because it helps move away from narrow understandings of agency that purely focus on tangible forms of decision-making, showing that agency can indeed manifest in different forms (i.e. bargaining, resistance, consent and manipulation). Secondly, it highlights that empowerment is not only about making choices but endorsing them, revealing the critical importance of individual self-worth in translating agency into empowerment. Thus, making choices that represent one's values and desires, and reflect self-confidence (power within) and well-being. Intrinsic agency is bound up with concepts of internal empowerment and subjective well-being (Diener & Biswas-Diener, 2005) which explains why having objective power (resources and capacities) does not necessarily equate to improved well-being.

Finally, the third component of empowerment, *achievements*, consists of the concrete outcomes of choice. While resources and agency constitute the potential for living the life one wants by equipping individuals with the capabilities to realise their valued 'being and doing' (Sen, 1985), achievements refer to the fulfilment (or unfulfillment) of this potential.

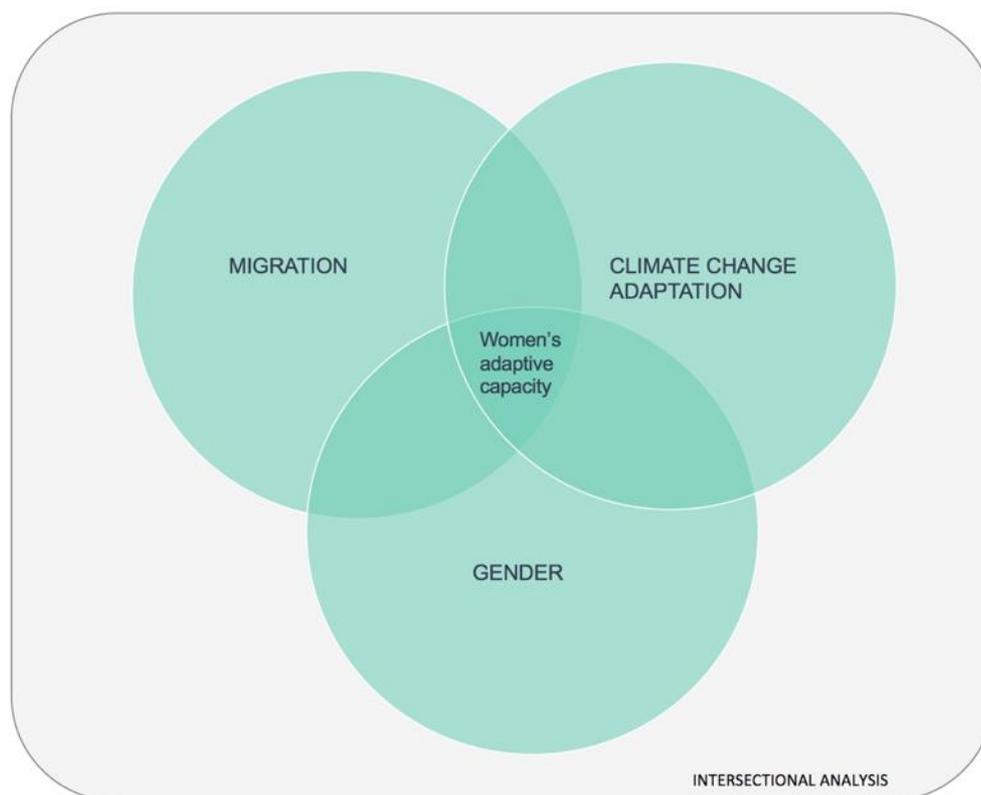
In relation to empowerment, an apparently positive achievement, such as engaging in paid work activities, should be contextualised within understandings of agency. For example, it should be considered whether it was an endorsed and valued choice or an imposed condition, and how such achievement shaped resources, which in turn, influence agency.

Although a full analysis of women's empowerment is beyond the scope of this thesis, many of its aspects are relevant to adaptive capacity. In this study I argue that understandings of adaptive capacity should be grounded in what people value as worthy and should be refocused on their own interpretation and expression of well-being. The conceptualisation of agency and empowerment discussed here, helped me to undertake this analysis departing from objective and assets-based understandings of adaptive capacity that dominate climate adaptation literature.

2.5 Theoretical framework

Drawing on the earlier discussion, this section briefly discusses the theoretical framework that grounded this thesis; positioning it at the intersection of migration, climate change and gender disciplines. The interrelation between these three fields of research is visually represented in Figure 3 showing an area of overlap within which lies the focus of this study: the impact of migration on women's adaptive capacity. Intersectionality underlies the entire research and is thus illustrated in the figure as underpinning the framework.

Figure 3. Overarching theoretical framework



Source: Author's elaboration

Within the climate-migration debate, this study follows the migration as adaptation paradigm, from the perspective of the impact that migration has on adaptation and adaptive capacity of people and communities in migrants' areas of origin. While acknowledging the usefulness of Black et al. (2011)'s framework for understanding the conditions in which migration takes place under the influence of environmental factors, the focus of this thesis is on what happens post-migration. Furthermore, in contrast to previous literature and political discourse as discussed in this chapter, which have broadly focused on economic impacts, this thesis expands its remit to include the much-neglected social, cultural, and more importantly, cognitive dimensions of migration. Moreover, departing again from the bulk of literature that focuses on households as unit of analysis, this thesis seeks to investigate power relations across, but especially *within*, these economic and social units, and the ways in which migration interacts with gender, caste and social position to shape women's adaptive capacity in these areas of origin. This multidimensional nature of power and inequality are examined using an intersectionality approach.

2.6 Conclusions

This chapter discussed the theoretical background that underpins this study within and across migration, adaptation and gender studies. The chapter unpacked the notions of adaptation and adaptive capacity, highlighting gaps in the empirical understanding of adaptive capacity and the predominance of theory- and assets-driven approaches to its analysis, which fail to recognize the heterogeneity of needs and capacities and the diversity of local realities (section 2.2). Next, it engaged with the climate-migration debate discussing the various interlinkages between migration and environmental change and critically reflecting on the conceptualisation of the migration as adaptation paradigm. The chapter pointed to the need to develop more comprehensive and heterogeneous understandings of the relationship between migration and adaptive capacity by examining the differentiated impact of migration on household structures beyond material assets, accounting for processes of power and inequality. It also shows an overall absence of gender perspectives within the climate-migration discourses (section 2.3). Section 2.4 unpacks the concept of gender, pointing to its multidimensional and intersectional nature and linking it to environmental studies. Finally, the chapter presents the conceptual framework that guides this study.

CHAPTER 3. METHODOLOGY

3.1 Introduction

Chapter 2 highlighted research gaps and the limits of various approaches to the study of migration in the context of climate change and adaptation. In particular, the chapter indicated the limitations of existing approaches to gain nuanced and gender differentiated understandings of the climate-migration relationship. Chapter 3 now outlines further the research design and the epistemological and methodological approaches that were used to address the research objectives while also reflecting on the fieldwork experience.

The chapter begins by discussing the study epistemology and ontological position and reflects on the application of intersectionality as an analytical framework (section 3.2). This is followed by a description of the study site (section 3.3), and in turn an explanation of the methodology and various data collection tools used during the fieldwork (section 3.4). Next, I briefly explain the data analysis (section 3.5) followed by a reflection on the research limitations (section 3.6). I conclude with ethical considerations that apply to the entire process from research design to data collection and analysis. I reflect on whose voice is represented and who gains from the research (section 3.7). A brief chapter summary signals the transition to the next chapter that provides a context analysis of Odisha and the Mahanadi delta (section 3.8).

3.2 Epistemological underpinning

From an epistemological point of view, this research draws widely on Feminist Political Ecology (FPE) theories. Political ecology, a key framework in geography studies, aims to understand the human-environment relationship within complex interconnections between ecological, cultural, social and economic dimensions of environmental change. It recognizes that the way people interrelate with and understand the environment is socially constructed and mutually shaping (Blaikie, 1995; Escobar, 1999). A feminist perspective, in turn, places an emphasis on gendered power relations and challenges traditional approaches to political ecology rooted in understandings of the 'human' that are implicitly masculine. FPE accounts for the interplay of everyday power dynamics that influence environmental interests, knowledge and practices of social groups across different axes of power (Elmhirst, 2015; Rocheleau et al., 1996). Although these theories acknowledge the existence of a physical

reality, the emphasis is on human experience - that our views of the environment are interpreted by us as individuals and that access to natural resources is shaped by the politics of gender intersecting with other axes of differentiation such as race, class, caste, sexuality and social positioning.

By committing to feminist epistemology, FPE rejects dualistic and monolithic constructions of gender and fully embraces the concept of diversity and multi-dimensional subjectivities (Elmhirst, 2011). Embodying the concept of intersectionality, which will be discussed later in this chapter, FPE recognizes that people inhabit multiple identities, including but not limited to gender, the interaction between which shapes social and human-environment relations. Another important characteristic of FPE, embraced in this study, is the emphasis on multi-scale analysis (from individual and intra-household to national and international) which is critical to understanding how power is reinforced through the interconnection of these scales. International and national power structures are often reproduced and sustained at the intra-household and individual level (Elmhirst, 2011). Multi-scale analysis allows identification of these reinforcing mechanisms and to truly understand what makes patterns of privilege and oppression resistant to change.

A final ontological element of FPE theories that is considered in this research, is the emphasis on human experience and people's own interpretation of their daily constraints. As put by Blaikie (1995:203) "*[...] our views of environmental issues and problems, either global or local, are identified, interpreted and given meaning by us as individuals*". People's experiences and interpretations of their wellbeing and adaptation needs, constraints and capacities are central to this study. Social identities such as gender, class, age, ethnicity and caste shape our visions of reality by influencing our daily lived experience. Again, while acknowledging the existence of a physical reality, this study embodies the concept that human-environment realities – and knowledge – are socially constructed; hence there is no single objective reality but a multitude of perspectives influenced by different values, beliefs and norms (Campbell & Wasco, 2000).

3.2.2 Empirical application of intersectionality

Feminist theories are deeply engaged with the concept of intersectionality – the idea that people are subjected to multiple identities that act simultaneously and intersect continuously, generating different axes of power (Elmhirst, 2011; Nightingale, 2011; Onta &

Resurreccion, 2011). FPE extends this concept; including an ecological dimension which explores how nature and the environment influence social diversity to form spaces where gender roles can be challenged (Nightingale, 2011). Since there is no universally standard approach to the use of intersectionality in research, I briefly discuss here the different perspectives that informed its uptake as lens of analysis in this study.

Applying intersectionality as an analytical category comes with many challenges. The lack of a clear methodology certainly represents one of its main weaknesses. McCall (2005), one of the first scholars to underscore the absence of rigorous methodological tools and the gap between notions of intersectionality and their empirical application, identifies three types of intersectional methodological approaches:

- i) The anti-categorical approach rejects existing analytical and social categories, considering them inadequate and contesting their validity (McCall, 2005). It puts emphasis on the social process of categorization (Nash, 2008) and dwells in the assumption that categories are artificial and reproduce hierarchy, hence should be deconstructed. Not using existing categories is considered to free individuals from normative fixes and classifications (McCall, 2005). Although this approach is beneficial in that it highlights the normative nature of social categories, encouraging their critical analysis, in practice it remains unclear how it can be operationalized.
- ii) Intra-categorical approaches are theoretically grounded in the notion of complexity of lived experiences and usually make use of life stories to explore various marginalized subjects' experience within social groups (Bastia, 2014; Nash, 2008). The life experience approach focuses on one individual story to explore how people negotiate different identities whose intersection put them in a position of disadvantage. Such an approach is limited by its inability to draw generalizations or to capture relations of power between social groups, thus undertake inter-categorical analysis (Bastia, 2014).
- iii) The inter-categorical approach adopts existing social categories to centre the analysis on relationships of inequality among social groups (Nash, 2008). It is therefore a sort of antagonistic perspective to that of the intra-categorical approaches. Despite recognizing its limitations, McCall (2005) favours the inter-

categorical approach arguing that the comparative analysis of intersecting social identities among different social groups is what truly identifies inequalities, more than the analysis of single groups (intra-categorical analysis).

Each of these approaches come with benefits but also limits and unaddressed methodological challenges. The lack of a precise methodology has often led to the use of additive approaches to intersectionality that oversimplify inter- and intra-categorical approaches, treating identities as fixed and static (Bastia, 2014). Additive models of analysis simply add identities upon each other – for example, a poor Black woman would be considered more ‘oppressed’ than a Black woman because the former embodies more categories of oppression (Crenshaw, 1991; Valentine, 2007). However, power does not operate in linear and additive ways but across multiple intersecting, and mutually reinforcing, dimensions. Additive approaches result in static descriptions of social differences where men and women are often treated as opposed categories and structural factors that lead to oppression and privilege are overlooked (Bastia, 2014; Nash, 2008). Intersectional approaches should aim to go beyond description to unpack the processes through which multiple power axes mutually reinforce one another and produce inequality at multiple levels, in context and time specific ways (Elmhirst, 2015).

This study has sought to move away from additive approaches to intersectionality by seeking to systematically ‘intersect’ categories and avoid oversimplification or linear assumptions. The primary aim to explore complexity and understand the structural processes that generate social differences – influencing women’s experiences of migration and adaptive capacity – has characterized all the phases of the research, from design to writing-up. Whilst the study has paid more attention to intra-categorical analysis (within the women category) it has also considered inter-categorical issues by exploring intersectional identities (i.e. caste) among social groups (men and women). Gender and caste were already identified as relevant categories from the literature review; others emerged during the fieldwork through understanding of locally constructed norms.

3.3 The fieldwork and the study sites

This study was partially funded by the ‘Deltas, Vulnerability and Climate Change: Migration and Adaptation’ (DECCMA) research. The selection of the study area in Odisha was therefore tied to the project specific geographical focus. The choice of the Mahanadi delta, out of the

three deltas researched within the DECCMA project (Volta Delta in Ghana and GBM in Bangladesh being the other two), was however, driven by my interest in gaining knowledge and experience of India, and ultimately influenced by a series of logistical considerations in the rolling out of the fieldwork. A context analysis of Odisha and the Mahanadi delta is provided in Chapter 4.

3.3.1 Fieldwork and selection of the study site

The main period of primary data collection for this thesis took place during September-November 2016, preceded by an initial visit of one month in August-September 2015.⁸ This preliminary visit enabled identification of the study area within the Delta, piloting of the research methods and gaining a better understanding of the context, which ultimately helped in refining the research questions.⁹ It was also an opportunity to identify my research team which comprised of a facilitator (a man in his 30s) from the study area, who helped establish contacts in the villages and with fieldwork logistics, and an interpreter (a woman in her 30s) from the capital city of Bhubaneswar who helped overcome the language barrier. Establishing a work relationship with them in 2015 facilitated the subsequent fieldwork in 2016 as they were already familiar with the study and the research methods and aware of their role with regards to their positionality.

During the main fieldwork in 2016 I lived in a village close to the study sites, where I stayed with a family that offered to host me.¹⁰ The family was comprised of two young women, an adolescent girl and their middle-aged parents. Their father had a shop in Rajnagar and owned a small coconut plantation. Living with them was an invaluable experience and an opportunity to further familiarise myself with the local context by participating in various social events and sharing meals and leisure time.

Selection of the study area

The selected villages for this study are located in the district of Kendrapara, in the northern part of the Delta (see Chapter 4), in the Rajnagar block¹¹. The district selection was finalized during the preliminary fieldwork, following discussions with the DECCMA research team in

⁸ The duration of both phases of fieldwork was contingent to available funding.

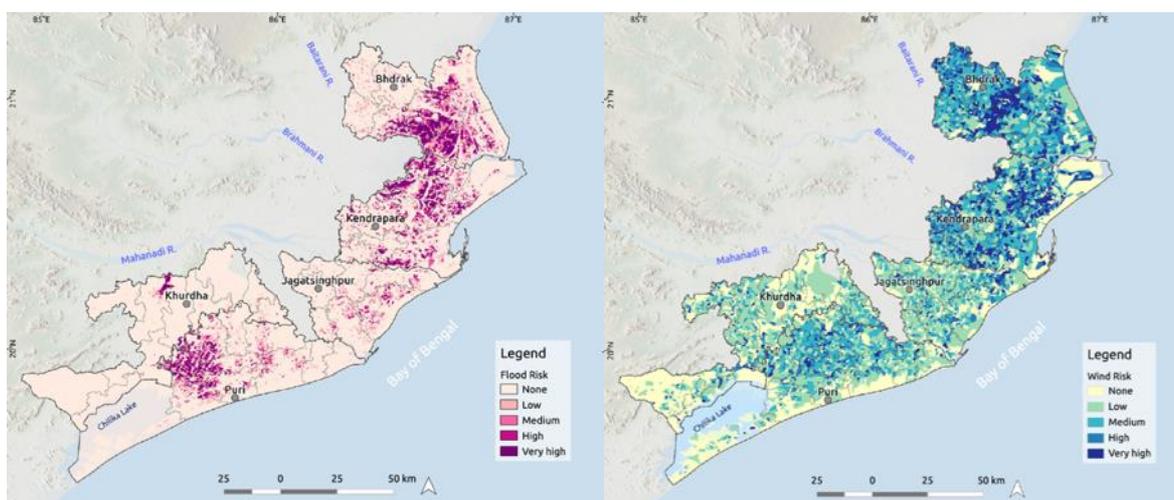
⁹ To share the costs, the preliminary visit was conducted with another PhD student funded by DECCMA.

¹⁰ During my initial visit in 2015, under the advice of the DECCMA research team in Odisha, I was staying in a Forest Guest House in the same area. However, I felt that I was missing the opportunity to immerse myself in the local culture beyond the daytime spent in the study villages. For this reason, in 2016 I decided to explore the possibility of living with a family in a nearby village.

¹¹ The administrative authorities, in order of hierarchy from highest to lowest, are organized as follows: District, Blocks and Gram Panchayats (GP) (see Chapter 4 for an overview of the administrative structure of the study area).

Odisha and based on several logistic considerations including safety and accessibility. Kendrapara is found to be the most risk-prone district in the Delta, highly exposed to multiple extreme events such as floods, high speed cyclonic winds and storm surges (see Figure 4). It is also severely affected by coastal erosion which, as noted in the next chapter, is higher in the northern parts of the Delta (Mukhopadhyay et al., 2018). Exposure to multiple climate stresses is exacerbated by unfavourable socio-economic conditions that make it one of the most vulnerable districts in the Delta with the lowest Per Capita Income and the lowest urban population rate (Census, 2011). Rajnagar block, in particular, is a very high-risk zone due to a combination of high exposure to hazards and social and physical vulnerabilities, including a high percentage of mud houses and high dependency on rainfed agriculture (Ghosh et al., 2019) (see Chapter 4).

Figure 4. Flood risk and wind risk map in the Mahanadi Delta



Source: (Ghosh et al., 2019)

The selection of the study villages in Kendrapara was guided by the following five criteria: i) mixed location (internal and coastal villages); ii) different exposure to hazards (slow and quick onset); iii) evidence of migration (communities interested in migration, either in- or out-migration); iv) cost-effectiveness and logistic issues related to the fieldwork (physical accessibility of the villages and geographical proximity to each other); v) willingness to take part in the research. This last factor was linked to issues of research fatigue, which led to the selection of only two of the three villages where I piloted the research methods. The preliminary fieldwork highlighted that one of the villages was over-researched and that the community was either disinterested, anticipating questions, or reluctant to engage in the study. Some community members expressed their concern relating it to their experience as research participants in other studies which did not bring any benefit (i.e. see Clark, 2008).

The three villages that finally became the main fieldwork sites are Khaita, Dakhinaveda and Nuagan (see Figure 5). One village is located on the coast (Khaita) and the other two are inland on the riverbank (Dakhinaveda and Nuagan). The villages are all in the Rajnagar block but they each belong to a different Gram Panchayat. Rajnagar is the closest semi-urban centre with the main services and the local government offices. The distance from the research villages to Rajnagar varies but is within 11-17 Km (40 minutes by car). Kendrapara, the district headquarter, is around 50-60 Km away (2.5 hours by car), while Bhubaneswar is located at 130 Km from the study site (4.5 hours by car).

Figure 5. Approximate location of the three study villages (shown by the yellow circles)



Legend: K (Khaita); D (Dakhinaveda); N (Nuagan)

Source: Satellite image, Google maps (accessed on 3 September 2019)

In all the selected villages the predominant livelihood activity is agriculture (rice paddy). Despite the proximity to water bodies, fishing is not practiced due to a fishing ban on the coast and because the river is infested with crocodiles. Table 1 provides a summary of the key characteristics of the villages.

Table 1. Study villages: summary of key information

Village	Km to Rajnagar	Km to Kendrapara	Closest market	N. Schools	Climate-related infrastructure	Position	Comments
Khaita	11 Km (15 mins by car)	51 Km	Hatina 4 Km	Primary school and pre-school, 4 Km from the high school	Multi-purpose cyclone shelter and embankment About 15 concrete houses and 5 semi-concrete houses	500 m. from the sea	Better socio-economic conditions than the other study villages
Dakhinaveda	15 Km (20 mins by car)	55 Km	Jaraimur 3 Km	Primary school, 4 Km from the high school	The primary school is used as cyclone/flood shelter; one river spur. About 5 concrete houses, 2 semi-concrete houses	Crossed by the river Brahamani and its tributaries (Hansua and Kharasota)	40 acres of agricultural land and 80 houses lost in the river in the last 40 years (relocated to the entrance of the village, few relocated elsewhere)
Nuagan	17 Km (40 mins by car)	57 Km	Jaraimur 5 Km	Primary school, 1 Km from the high school	The primary school that should be used as cyclone/flood shelter is damaged and in the most flood-prone area of the village. 1 concrete house	Crossed by the Brahamani river on three sides	70 acres of agricultural land and several houses lost in the river in the last 40 years (relocated to other parts of the village)

Khaita is a relatively large coastal village with around 970 inhabitants and 200 households. Of those selected, it is the village with the highest number of SC households (see Table 2) which are clustered along very damaged mud roads in three different areas, all highly exposed to wind and inundation and far from the water wells. GC households are generally located on concrete roads in the central part of the village, while OBC households occupy mud or red soils areas. Khaita has a Multi-Purpose Cyclone Shelter that was built by the Red Cross in the late 90s and is separated from the sea by the embankment. The village is connected to the road to Rajnagar through a very damaged mud road of 1-2 Km. During heavy rains the village remains isolated for days.

Table 2. Demographic profile of the study villages

VILLAGES	N. Households	Tot. Population	Male	Female	Scheduled Caste Population	Male	Female
<i>Khaita</i>	196	971	499	472	372	201	171
<i>Dakhinaveda</i>	79	477	246	231	33	17	16
<i>Nuagan</i>	167	840	428	412	39	22	17

Source: Author's elaboration, Census (2011).

Dakhinaveda is a village of around 477 inhabitants distributed among 79 households. There is very little presence of SC (about 6 households) located in muddy, low lying land, owned by one villager who lives somewhere else in Kendrapara. OBC households also live on mud roads but on the other side of the village, which is less exposed to floods. GC households are clustered along the two concrete roads. Dakhinaveda is crossed on two sites by the Brahamani river and two of its tributaries (Hansua and Kharasota) and highly exposed to floods and riverbank erosion. Over the last 40 years, part of the village has been lost to the river. The households relocated to government land in an area slightly detached from the main village. A small strip of agricultural land now lies on the opposite side of the riverbank and is reached by boat.

Nuagan is the smallest village with around 355 inhabitants and 76 households. With no concrete roads, it develops along three main mud and red soils roads. GC households are located at the back of the village in a highland area less affected by water logging. SC and OBC households are close to the river between the entrance and the middle of the village. Nuagan is crossed on three sites by the Brahamani river, whose estuary is only a few

kilometres from the village. Although well connected to the main road, it is 40 minutes by car from Rajnagar, hence relatively far from the main services. Nuagan is the poorest and most marginalized of the three villages. It does not have a shelter. The school building is damaged and during floods people evacuate to the closest concrete road using polythene sheets to protect themselves from the rain and the wind.

3.4 Methodology and methods of data collection

The data were collected using a variety of qualitative tools including semi-structured interviews, focus group discussions, participatory rural appraisal (PRA) and participant observation. The diversity of techniques responded to the need to conduct an in-depth type of analysis able not only to identify traits of social differentiation in the climate-migration relationship but also to explain the underlying processes acting at various levels (individual, household, community). In turn, using multiple tools helped to triangulate the data (Leech & Onwuegbuzie, 2007).

Qualitative data allowed rich insights into people's life, their understanding and perception of adaptive capacity, and experience of migration. Although qualitative data collected from a specific site does not allow generalization, as noted by Piguet in his review of methodological approaches to climate-migration studies:

[...] such [qualitative] studies offer invaluable insights into people's attitude toward, and their perception and representation of, climate change in general and the migration option in particular; a central dimension if one wants to gather a coherent and complete theory of migration related to environmental change (Piguet, 2010:521)

While I originally considered conducting a household survey in the three sites to further triangulate the data and identify representative trends and patterns (e.g. migration patterns), I ultimately decided not to use this tool as I lacked the time and financial resources for meaningful implementation.

The final selection of the methods was guided by the research questions and objectives (see Table 3) and refined after the initial field visit (2015) which led to a further reflection upon the use of some of the tools. For example, the PRA exercises were reduced in number to

decrease the time requested from the participants while still meeting the data needs. During the first visit, I noticed that conducting too many focus groups and PRA was leading to fatigue and adding extra burden to men's and women's activities, despite my being conscious of time constraints and time preference. In the 2016 follow-up fieldwork, I introduced the use of visual aids (see section 3.4.1) in some of the PRA activities to make the methods more inclusive for participants with no or limited literacy as well as to make all participants more comfortable and engaged in the discussion. Two new PRA exercises were crafted around the visual aids to allow a more accurate investigation of adaptive capacity and elicit discussion on power dynamics and gender roles. Although this study puts emphasis on individual and household perspectives and on women's views, insights at community level were pivotal to gain a comprehensive understanding. The focus group discussions (FGDs) complemented the semi-structured interviews by allowing an understanding of the community dimension, as well as to integrate men's viewpoint of patriarchal structures and adaptive capacity needs, which offered critical inputs to the analysis.

Table 3. Research objectives, data required and methods of data collection

RESEARCH OBJECTIVES	DATA REQUIRED	METHODS
Overall aim: To understand the differentiated impact of male-out migration on women's adaptive capacity		
Identifying gender differentiated determinants and constraints to adaptive capacity.	Men's and women's perception of environmental risk and understanding of adaptation and adaptive capacity; differentiated factors shaping adaptive capacity including their interrelation.	Participatory rural appraisal, key informant interviews, semi-structured interviews, observation
Investigating migration patterns in the study area, including migration drivers and gender differentiated impacts at household and intra-household level.	Factors influencing the decision to migrate; relationship between migration patterns and pre-migration socio-economic conditions; effects of migration at household and intra-household level; differentiated experience of male-out migration for the women who remain behind.	Focus group discussions, semi-structured interviews
Understanding gender relations, power dynamics and underlying causes of inequality.	Evidence of power dynamics and patterns of privilege and oppression; intra-category differences with regards to underlying factors of gender inequality, women's perception empowerment and autonomy.	Semi-structured interviews, participatory rural appraisal (power mapping), key informant interviews, observation

Finally, this methodological approach allowed me to make the most of my existing skills and experience in the use of qualitative methods, especially participatory techniques, and of the time and resources available for the fieldwork as a doctoral student. Each of the methods is discussed in turn, next.

3.4.1 Focus Group Discussions (FGDs) and Participatory Rural Appraisal (PRA)

Across the pilot and the main fieldwork, I conducted a total of 32 FGDs with separate groups of men and women in the three study sites (Table 4).¹² Focus groups have been widely used in human geography as a tool to explore people's view of a particular issue and their interaction/dialogue with others over that issue (Conradson, 2013; Stewart & Shamdasani, 2014). Differently from individual interviews, in FGDs the meanings are negotiated and

¹² A focus group is "a group of individuals selected and assembled by researchers to discuss and comment on, from personal experience, the topic that is the subject of research" (Powell et al., 1996:499)

debated through a group discussion as the participants seek to come to a collective agreement of these meanings (Cook & Crang, 1995). In this research, I used a participatory approach for conducting the FGDs, drawing on the Participatory Rural Appraisal (PRA) technique (Chambers, 1994b), to elicit conversation and actively involve the participants.

Table 4. Focus group discussions conducted in the three villages between 2015 and 2016.¹³

Type of FGDs and PRA	N. of male FGDs	N. female FGDs	Coding
Power mapping	3	3	The FGDs are coded in sequential numbers following the order of appearance in this table, as in the example below:
Problem/Capacity Ranking	3	3	
Resource mapping	3	3	
Vulnerability matrix	1	1	FGD (Number)-K/D/N (Village initial)-M/W (Men/Women))
Seasonal calendar	1	1	
Historical timeline	2	2	E.g. PRA-Men Vulnerability Matrix is: FGD19-K-M
Venn diagram	1	1	
Daily clock	2	2	

Since its origin in the early 1990s, PRA has been increasingly adopted by researchers and development practitioners as a tool to generate knowledge through participatory, bottom-up approaches. A distinctive feature of PRA methods is that they put local people's capabilities at the centre of the data gathering, allowing them to own the conversation, creatively interact and play a part in investigating themselves (e.g. by mapping, quantifying, estimating, scoring etc.). In PRA methods the researcher is mainly a facilitator and a listener (Chambers, 1994a). It is important to maintain flexibility and a relaxed behaviour to avoid patronising the participants and leave them to lead (Chambers, 1992, 1994a, 2007) while mitigating the risk of reproducing power imbalances. For example, participants with more power in the community could dominate the process. During the FGDs, I tried to address these issues by finding ways to engage everyone in the activities while remaining respectful of local norms. The groups were separated by gender but even within the same gender group there were visible dynamics of power at play. Participants from SCs for example, would usually sit at the back and young daughters-in-law would not interact if their mother-in-law was in the group. This presents a challenge and a limitation of PRA, but it was also an opportunity to observe how power relations manifest in community discussions. Observations constituted data in and of themselves.

¹³ The table does not include the pilot FGDs conducted in 2015 in the villages that were deselected from the study. As noted in the table, not all FGDs were conducted in all the villages. This was due to time constraints and in order to reduce research fatigue for the participants. The tools that were not repeated are those deemed less relevant.

I purposefully chose a participatory and agency-focused methodological approach to the FGDs to maximise the respondents' involvement and because the aim, especially for the adaptive capacity analysis, was to reduce to a minimum my interaction and have the information originating from the participants' own interpretation. Moreover, I embrace the view that FGDs should be an opportunity for the communities involved to spark discussion, share ideas and enhance their knowledge through the sharing of experiences (Chambers, 1994a; Morchain et al., 2015), instead of being passive data-gathering exercises. Even so, I acknowledge the ethical issues that PRA may give rise to such as those pointed out earlier of power and exclusion within the group, the outsider-insider relations related to my positionality, and cross-cultural interpretation of the findings (Campbell, 2002) on which I will expand later in this chapter.

Participation in the FGDs was voluntary and facilitated by the head of the village who was instrumental in establishing trust with the community. The facilitator helped with inviting and gathering people at the time and location agreed. Men focus groups usually took place in the morning after men's work in the agricultural fields, while women focus groups were organized early in the afternoon, which was the only time of day women could attend. The FGDs were held in a location chosen by the participants, usually an open space, in a central area of the village (e.g. cyclone shelter, school). While this was convenient, it also often made it challenging to control the number of participants to below 15 people. On some occasions, villagers stopped by and joined the group as is common in rural settings (Vissandjée et al., 2002). This was particularly the case with women focus groups, which gathered larger numbers. Women were, in fact, generally more curious and eager to participate than men. Sometimes the group size was controlled by inviting people to attend the focus group on another day. However, this was not always possible. Conducting focus groups in rural contexts in developing countries requires a higher level of adaptability and flexibility (Goodsell et al., 2009; Vissandjée et al., 2002). Respect and politeness towards the hosting communities and the local culture was of primary importance for me throughout the fieldwork and outweighed the 'issue' of group size. In addition, allowing people to join and share embraced the essence of the PRA approach, which is less focused on the needs of the researcher and more on local people's engagement. Overall, the larger focus groups (20-25 people) performed equally well and the size did not compromise the quality of the data collected.

The gender separation was not a problem as women FGDs were conducted at a time of the day when men were busy in the fields. Both men and women focus groups were heterogenous in terms of caste and age. However, disaggregating the information collected became problematic since it was not always possible to identify all the participants who spoke or contributed. A final remark should be made in this regard on the issue of representation. Because participation in the FGDs was voluntary and, as noted previously, power relations influenced the process, it is possible that the most marginalised members of the research communities were not represented (Baker & Hinton, 1999; Browne, 2016). I sought to address this issue and to enhance inclusion in the interviews where I had more control over the selection of the respondents.

The PRA methods used in this research are inspired by the PRA toolkits that were produced in the context of climate vulnerability and capacity needs analysis (CVCA) to investigate vulnerability and adaptive capacity at community level (CARE, 2009). I participated in some of the project work that designed, and later tested, these tools for CARE International (e.g. in Senegal), which in turn gave me useful insights and a better understanding of their benefits and challenges. As such, I was able to use them with more confidence in my doctoral fieldwork. The tools that were used include community mapping, seasonal calendar, vulnerability matrix, Venn diagram, historical timeline and daily clock. Table 5 illustrates key features of each tool and their data collection purpose in the context of this study. It is important to further highlight that in this research the primary objective of using PRA for FGDs was not to produce maps or visual outcomes but to enhance the participants' engagement in exploratory discussions, let them own the process and limit my interference.

Table 5. Summary of Participatory Rural Appraisal exercise activities conducted during the fieldwork

Activity (each activity lasted one hour approximately)	Purpose	Notes
<p><u>Community mapping</u> The participants drew the landmarks in the community and populated it with facilities, settled areas, resources, water bodies etc.</p>	<ul style="list-style-type: none"> ○ To identify livelihood resources and critical facilities in the village and understand differentiated access to them; ○ To become familiar with the community and see how men and women perceive their space; ○ To identify the areas in the village most exposed to climate hazards and who uses or is settled in those areas 	<p>When the map was completed, I asked the participants to use sticky notes of different colour to indicate what was men/boys' and women/girls' access to, and use of, each resource</p>
<p><u>Seasonal calendar</u> The participants developed a calendar which shows relevant seasons, events and activities that occur during the year</p>	<ul style="list-style-type: none"> ○ To understand periods of stress, vulnerability and seasonal migration; ○ To understand livelihoods activities and coping strategies; ○ To understand social roles and changes in seasonal activities 	<p>This tool helped to identify the gender division of labour as well as gender differentiated perception of seasonal changes (both weather and livelihoods related)</p>
<p><u>Vulnerability matrix</u> The participants ranked on a scale from 0 (none) to 5 (high), the impact of climate stresses and hazards on each livelihood activity and events identified previously in the seasonal calendar</p>	<ul style="list-style-type: none"> ○ To investigate people's perception of climate stresses and hazards ○ To understand the differentiated impact of climate stresses on livelihoods ○ To investigate which role is played by migration to mitigate these impacts ○ To investigate current and desired adaptation strategies 	<p>The tool was useful to identify people's differentiated perception of vulnerability related to different climate hazards and stresses</p>
<p><u>Venn diagram</u> The participants identified institutions/ organisations/ groups (formal and informal) and services used by the community. Then they drew a big circle in the centre of the paper that represents the community and circles around that which represent the identified elements considering: 1. their size (the bigger the more important), and 2. distance from the centre (the more distant the less accessible</p>	<ul style="list-style-type: none"> ○ To understand which institution/organisation group/resource/services are most important and to whom ○ To analyse the engagement of each group with the different institutions ○ To investigate differentiated access to services (barriers and enabling factors) 	<p>The tool elicited discussions on men's and women's access to relevant institutions/organizations/groups and gender differentiated perception of their importance for adaptation and wellbeing</p>

<p><u>Historical timeline</u> The participants recalled the main past climatic events and drew a timeline that marked these events. Next to each event they were asked to recall their impacts, how they coped and any changes in livelihoods and lifestyle that occurred. This exercise was adapted to also consider migration (see Chapter 5 for an example)</p>	<ul style="list-style-type: none"> ○ To understand past hazards and stresses and changes in frequency and intensity ○ To investigate men's and women's perception of environmental change against scientific data ○ To investigate changes in migration patterns as perceived by the respondents ○ To explore environment-migration linkages 	<p>This tool was critical to get insights into past climatic events and to investigate changes in people's vulnerability to specific weather hazards with evolving adaptation measures. It was also key to elicit discussion and identify community's perception of changing migration patterns.</p>
<p><u>Daily clock</u> The participants made a list of the activities that they undertake daily – from 6am to 6pm</p>	<ul style="list-style-type: none"> ○ To understand men's and women's daily activities and division of labour ○ To investigate changes in the division of labour, for example during migration periods 	<p>The daily clock charts are critical to show the gender division of labour and gender imbalances in the workload.</p>
<p>PRA activities that used the cards developed following the pilot fieldwork</p>		
<p><u>Power mapping</u> The participants were given two cards showing a man and a woman. They had to group under each card showing assets, activities and actions depending on who (men or women) generally leads, owns or takes decisions over them (e.g. children's education, livestock, borrowing money etc.)</p>	<ul style="list-style-type: none"> ○ To further investigate the gender division of labour and gender imbalances in access and control over assets ○ To investigate intra-household power dynamics and gender relationships ○ To understand men's and women's perception of gender inequality ○ To identify changes in power structures related to changes in household structures (e.g. in migration contexts) 	<p>The power mapping was extremely useful to elicit conversation and reflection on gender inequality and gender relations, even at a deeper level than expected, especially in men's focus groups.</p>
<p><u>Capacities and problems ranking</u> In the first part of the exercise the participants thought about their needs and constraints in terms of what they need to better adapt to climate stresses and hazards and improve their wellbeing. Then, they had to group the cards (showing assets, actions and activities) accordingly. In the second part, they were asked to reorganize the cards on three lines in terms of priority (from highest to lowest)</p>	<ul style="list-style-type: none"> ○ To investigate gendered perception of determinants and constraints to adaptive capacity and wellbeing ○ To investigate men's and women's priorities in terms of needs and capacities to enhance their adaptive capacity and wellbeing 	<p>This tool allowed to focus the conversation on needs and capacities and to identify gender differences in determinants and constraints as well as prioritization.</p>

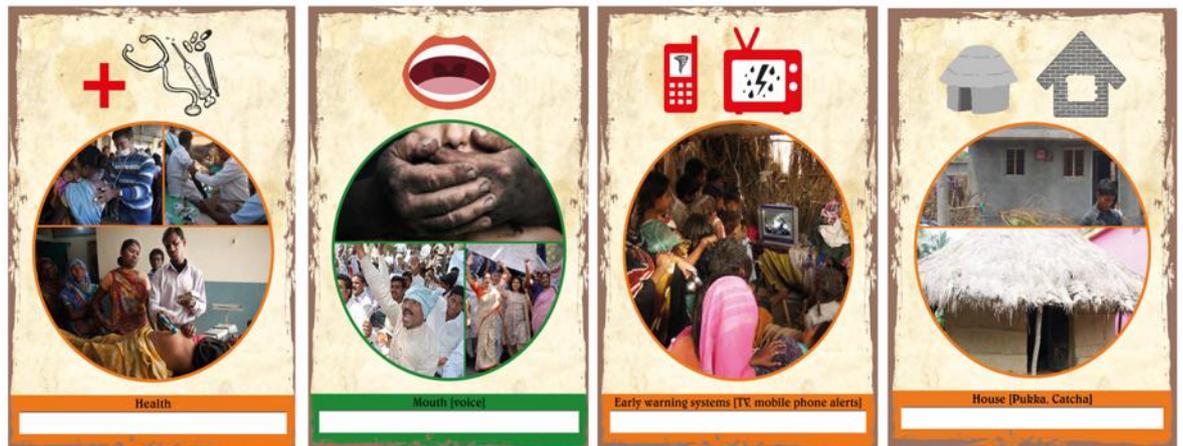
As is common in PRA, visual sharing was a key characteristic of all the FGDs that I conducted. The production of visual elements and the use of visual aids allowed active participation and engagement and helped in breaking down some of the power dynamics (Kesby, 2000). What makes PRA more accessible than other research tools is essentially that everyone, literate or illiterate, can interpret, manipulate and alter the physical objects that are used and produced, be it maps, charts, drawing or ranking (Chambers, 1994a). It is especially for this reason that, after the pilot visit, I decided to introduce two new PRA activities to further investigate power structures and adaptive capacity which were crafted around the use of cards (Table 5).



Picture 1. Women using the cards during the capacity and problems ranking PRA activity

With the help of a friend who is a graphic designer, I developed 32 cards grouped into actions (e.g. migration, education, training, voice etc.) and assets/resources (e.g. shelter, houses, sanitation, health etc.). Figure 6 illustrates some of them. The themes of the cards emerged from the information collected during the pilot fieldwork in 2015.

Figure 6. Example of the cards used in the power mapping and capacities/problems ranking exercises



The cards were designed to be relevant to the context, with the intent of eliciting discussion without constraining it. The themes were purposefully generic (e.g. education, sanitation, borrowing money, migration etc.) and the participants had the possibility to discard the cards that they did not deem relevant or to add new ones. For this, the back of each card was designed with a blank space where the participants could draw or write new themes. The use of these cards allowed greater engagement as, unlike the other PRA tools where there is one person in charge of drawing or marking, many participants could touch and look at the cards at the same time. This generated rich discussions and allowed deeper reflection during and after the exercise when the participants could visualize the outcome (Roberts, 2016; Rose, 2016). For instance, after a power mapping exercise one man said: *“Look how many cards under the man and how few under the woman. I never thought about it in this way. Responsibilities and decisions are not balanced”* (FGD01-K-M). Lastly, the use of the cards brought a fun element in the FGDs which helped to establish a relaxed and positive atmosphere.

3.4.2 Semi-structured interviews

3.4.2.1 Sampling and process

Semi-structured interviews constituted the primary method of examining differentiated adaptive capacity and the experience of migration through women’s perspective. While these key components of the research have also been investigated through FGDs, the interviews allowed for a more in-depth understandings, zooming into intra-household relations and power dynamics and grasping aspects related to emotions, feelings and subjective wellbeing that belong to the individual’s more intimate sphere and cannot be detected in group discussions (Edwards & Holland, 2013). In total, 67 interviews were conducted in the three study villages between September and November 2016, namely: 23 in Dakhinaveda, 22 in Kaitha and Nuagan each.¹⁴ The primary focus of investigation were women living in households with migration, generally migrant’s wife or mother. A handful of non-migrant households were included to allow comparison, especially in terms of intra-household power relations. The respondents (all women) were selected with the help of the head of the village and through snowballing.¹⁵ The selection was purposive to ensure that

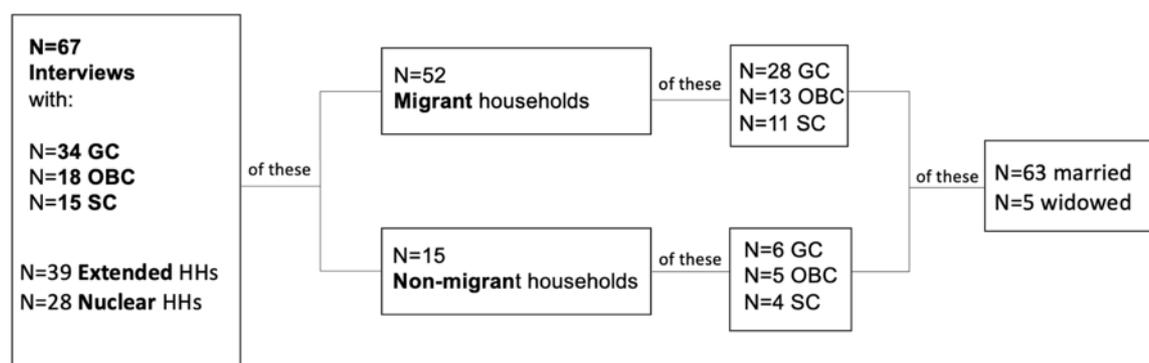
¹⁴ The three pilot interviews that were conducted during the initial visit in 2015 are not considered here as they were not used in the analysis.

¹⁵ Although not originally planned, one man was interviewed (see Chapter 5). He was in the household at the time of the interview with his wife and he was eager to share his experience as a migrant.

interviews reflected differences of caste, age, class and marital status, pivotal to the intersectional approach explained earlier. Caste and marital status were used as primary categories for selection within which differences of class and age were usually nested (Ritchie & Lewis, 2003a).¹⁶ Caste was disaggregated into three main groups of General Castes (GC), Other Backward Castes (OBC) and Scheduled Castes (SC).¹⁷ As observed by Kaijiser & Kronsell (2014) using an intersectional approach does not mean adding as many categories as possible to the study but widening the perspective and considering the complexity even though only the most relevant categories for the given context are selected.

Figure 7 presents a summary of interview numbers:

Figure 7. Number (N=) of interview numbers in migrant and non-migrant households by caste, marital status and typology of household (nuclear vs. extended).



Source: author's fieldwork data

The relatively higher number of GC women interviewed, compared to the other caste-groups (OBC and SC), was due to a larger presence of GC in the study area and a generally larger incidence of migration among GC. Besides these characteristics, I realised early on in the fieldwork that the experiences of women differed also by type of household they lived in: nuclear and extended (I elaborate on these a little further down). As such, I included in my sample women living in both household types. Nevertheless, the number of interviewees living in extended households vs. nuclear households is slightly higher as the latter were fewer in the study villages. Finally, the selection of the respondents was also influenced by logistical considerations, such as who was available and willing to be interviewed.

¹⁶ For example, with no intent to generalise, SC generally belong to a different class than GC and widows may fall into a different age category than married women.

¹⁷ The study sites had no presence of ST.

In the thesis, information related to caste, age, migration and marital status are embedded in the narrative, using pseudonyms to maintain anonymity (e.g. Lila, 28-year-old, GC). Yet, the interviews are coded by village name and number (e.g. Khaita_03). Given the diversity of socio-economic and environmental conditions in the three sites, disclosing the village helps contextualise the respondent's point of view.

In terms of approach, the interviews followed open-ended guiding questions while allowing flexibility for spontaneous conversation (Silverman, 2016). I structured the interviews around the four phases identified by Charmaz (1990) starting with neutral and factual questions to set the tone, such as questions about household composition, age of the interviewee etc. (short-face sheet phase I); followed by questions related to migration, socio-economic aspects, everyday activities and the experience of climate stresses and shocks (informational phase II). When I could establish a trusting relationship with the respondent, and if the conditions allowed (i.e. no other members of the household were present in the room), I asked more sensitive questions about feelings, emotions, desires for the future (reflective and feeling phase III); finally I completed the interview with one or two ending questions to finish it on a positive note (ending phase IV) (Charmaz, 1990).

The guiding questions were refined after my initial field visit in 2015 (see Appendix A). During that time, I conducted three pilot interviews which raised some issues showing, for example, that to get relevant information about climate adaptation it was more effective to elicit the respondent's experience of a specific climatic event rather than making explicit links. I therefore adjusted my approach to avoid direct questions and assumptions that could influence the responses. For instance, instead of asking 'where did you find shelter during the last cyclone?', which assumes that the person had access to a shelter, I used expressions such as 'tell me what happened during the last cyclone', giving the respondent the opportunity to lead the answer and direct it towards the aspects she considered most relevant.

As for all the tools used in this research, priority was given to ensure – beyond obtaining informed consent – that women were comfortable with being interviewed and could choose the time and place to best fit their needs and daily activities (Morchain et al., 2015). This led

to potential biases, as on some occasion neighbours or other female members of the household sat and listened to the conversation. Their presence could have affected the interviewee's answers, this was usually reported as observation and considered in the analysis. The research process was intentionally flexible and respectful of local realities – it would have been impolite to ask someone to leave the room. Extra care and attention were given to respect the respondents' emotions and feelings (Campbell & Wasco, 2000). Although questions were carefully formulated, some conversations recalled emotional memories. When I noticed that the respondent was getting nervous or showing visible emotion, I offered to stop the interview and provided comforting words with the help of my interpreter. Sometimes, the interviewee insisted on continuing. In which case, after a break, I changed the structure of the interview and moved away from personal questions that could potentially raise further distress. As a general rule in all interviews, I tried to balance questions evoking positive and negative experiences and to end on an uplifting note as also suggested by feminist approaches.

3.4.2.2. Household typologies explained

As noted earlier, the type of household women lived in was important in the ways in which women's agency, voice, positionality, mobility and chances for empowerment were shaped. The two key household types encountered in the study villages were nuclear and extended. For the purposes of this study, a nuclear household is one consisting of a – generally heterosexual and married – couple, with or without children. Extended households, on the other hand, are those that in addition, have at least one relative, such as in-laws. While family and household types vary across the world, I draw on Gupta et al.'s (2021:116) definition who consider *extended households* as “an arrangement in which multiple adults other than spouses and unmarried children live and eat together on a daily basis”. According to Niranjana et al. (2005) and Gupta et al. (2021), extended households live typically in the same residence and share familial responsibilities, including household chores and childcare. The constitution of extended households may be due to both economic and cultural reasons. In the Indian context, extended families are closely related to the norm of patrilocality whereby young married couples cohabit with the husband's parents (D'Cruz & Bharat, 2001; Gupta et al., 2021; Niranjana et al., 2005). Extended households mostly function as a single economic unit where the family members pool resources together and share the cost of household expenses, financially supporting each other (Reyes, 2018). The

functioning of extended households is most commonly based on mutual support, whether monetary or non-monetary (e.g. childcare). The distribution of resources and tasks within the extended family system is, however, rarely equal leading to conflicts and patterns of oppression and privilege as observed in literature (D’Cruz & Bharat, 2001; Deshmukh-Ranadive, 2005; Gupta et al., 2021) and as discussed later in this thesis. The structure of extended households, family arrangements, and intra-household power dynamics specific to the South Asian context are discussed in detail in chapter 5 (section 5.2). But before that, I elaborate on the third data collection method: interviews with key informants in the study sites.

3.4.3 Key Informant Interviews

Semi-structured interviews were conducted also with Key Informants, including representatives of governmental and non-governmental organizations in the fields of development, climate change, education and health (see Table 6).

Table 6. List of key informant interviews conducted in 2015 and 2016

Interviews	Organisation
KII01-M	India Meteorological Department (IMD)
KII02-M	Regional Center for Development Cooperation (RCDC)
KII03-M	Odisha University of Agriculture and Technology (OUAT)
KII04-M	Focus Odisha (News Channel)
KII05-F	Society for Women Action Development (SWAD)
KII06-M	Odisha Disaster Management Authority (OSDMA)
KII07-F	Centurion University of Technology and Management (CUTM)
KII08-M	Oxfam
KII09-M	Action Aid
KII10-M	Health Department (Rajnagar Block)
KII11-F	Health Department (Rajnagar – village support)
KII12-M	Agriculture Extension Services in Rajnagar

Legend: KII: Key Informant Interview | 01-11: Interview number | M (male); F (female) interviewee

Key Informant Interviews (KII) helped to contextualise the participants’ point of view by linking individual, household, intra-household and community level observations to local and national scales. The overall aim of KII was to explore the disjuncture between the village respondents’ perception of their needs and the institutional support to address

development and climate adaptation challenges. KII were a useful tool to triangulate the data from the interviewees with the women and the group discussions and allowed identification of important gaps in policies' and programmes' implementation (Lokot, 2021). They were thus helpful in forming a multi-scale view as highlighted before.

The KII interviews were conducted in English, hence without the interpreter, and usually took place at the respondents' offices in Bhubaneswar and Rajnagar. Like interviews with villagers, those with key informants too lasted between 45 minutes to one hour and were voice recorded upon prior informed consent. A limitation of the KII conducted in this research is a prevalence of male key informants vs. women. While various efforts went into identifying women key informants, it was not always possible especially within government bodies.

3.4.4 Participant observation

Observation is an inductive and iterative practice of describing and making enquiries about the social processes that the researcher witnesses while in the field (Whitehead, 2005). Participant observation constituted a necessary tool to help comprehend the context and people's relations, behaviours and activities beyond the information collected through interviews and FGDs. It was critical in interpreting meanings and experiences.

I used observation to gain insights into the everyday life of the research communities and detect aspects of social life that could not be grasped by explicit questions. There are aspects of behaviour and power relations that cannot be told, or that are simply not explained to the researcher. *Non-verbal and extra-linguistic behaviour* (body movement, facial expressions, whispering, nervous talking, loudness, crying etc.), *people's interaction and use of the space* (how power relations are physically reproduced i.e. when sitting in a room), *daily observation of village activities* (acts, events and how different social groups experience them); all enriched this study and constituted valuable data. Observation also helped visualise the disjuncture between what people say and what they do in terms of gender and power relations.

Beside the time I spent in the study sites (see section 3.3.2), during the fieldwork in 2016 I stayed with a family in a nearby village. By living with them, I had the opportunity to immerse myself in the household daily routine, participate with them in social events (during the

Durga Puja festival), take part in leisure activities, help with cooking and other chores. Staying with the family and participating in the daily household life also enriched my field experience on a personal level. As a researcher, I could closely look at the social processes I was studying through observation and, to some extent, engage with these processes through participation in the household activities and social life. As Madden observes, fieldwork is a *'whole-of-body experience'* (Madden, 2010) a journey in which we learn and build knowledge with our intellects as well as with our body and senses (O'Reilly, 2012).

To record this knowledge, I used fieldnotes.¹⁸ I usually made mental notes during the day and wrote them at the end of every day. Although fieldnotes are descriptive in nature, they are never fully objective as the act of translating observation into written text involves interpretation (Emerson et al., 2001). Participant observation, in fact, may raise questions of legitimacy and positionality. As is discussed later in this chapter, I acknowledge the influence of my positionality throughout the research process and I am cognizant of my limitations as a cultural 'outsider' (Bukamal, 2022). My observations and their interpretation have been influenced by my positionality and by my cultural identity as a European, White, educated, woman. In section 3.7.1, I explain how the fluidity of my insider-outsider position has both facilitated and limited the research (Britton, 2020).

In this study, I embrace the feminist view of 'experientially based knowledge' (Stanley & Wise, 2002) which refuses to see the researcher as a scientific (rational) observer and instead values their role as a *"feeling subject at the centre of all intellectual endeavour"* (Stanley & Wise, 2002:193). The researcher's emotions, values and identities are entrenched in the research process and are central to the generation of knowledge about the social world (Campbell & Wasco, 2000). Investing personal emotions and experiences is not only inevitable but it is also a means to connect with the research participants and increase trust, which can improve the quality of the data (Ibid.).

3.5 Data analysis

The data analysis has been a recursive and iterative process. I started analysing and interpreting data during the fieldwork. Usually at the end of every day, I would look at my

¹⁸ In the thesis, fieldnotes are used to enrich the discussion with details that help contextualising quotes or situations (e.g. signalling a change in facial expression or potential biases due to the presence of someone in the room during an interview, reporting an observed behaviour in the community, visualizing spaces etc.). Fieldnotes are referenced as: 'Fieldnotes-date'.

notes while writing my field observations. This allowed me to start making sense of the data during the data collection, identify emerging themes and iteratively adjust the methodology to better explore relevant points of investigation that were emerging.

Subsequent to the fieldwork, I transcribed the voice recorded interviews into word processed documents and integrated the transcription with related field notes.¹⁹ The same was done for the FGDs and the observation notes. The transcriptions represented another opportunity for data analysis and allowed processing of the information through qualitative software (NVIVO), which enabled application of attributes (e.g. caste, age, gender) to each data source. Such disaggregation was useful to explore the emerging themes and patterns through an intersectional analytical lens. The visual data (e.g. maps, PRA photos, diagrams) were described in notes and consulted several times during the analysis. I also often returned to my field notebooks as they gave me a sense of closeness to the data and recalled memories and emotions of the field. Emotionality is an aspect accounted for throughout this research, including in the data analysis.

The analytic method that I used was that of thematic analysis (Campbell & Wasco, 2000). The data was coded, first through descriptive codes (e.g. 'access to education', 'livelihood activities', 'types of migration', 'barriers to adaptation', 'feelings of left-behind women') then into more analytical categories (e.g. 'environment-migration relationship', 'meanings of adaptive capacity', 'intra-household power relations'). Patterns and links between codes generated themes and sub-themes of analysis in relation to the research questions. The process was that of a multi-step thematic data analysis (Braun & Clarke, 2006) which could be dissected into four, non-linear, phases: compiling (transcribing), disassembling (separate the data and code), reassembling (finding links, generating themes) and interpreting (making analytical conclusions), hence writing-up by using and interrogating the data to build an analytical narrative (Castelberry & Nolen, 2018; Eaves, 2001; Yin, 2011)

From an epistemological standpoint, the approach that I undertook was that of multi-grounded or informed grounded theory (Goldkuhl & Cronholm, 2010). Unlike grounded theory, which prescribes a pure inductive process of theory generation freed from existing ideas and established categories (Glaser & Strauss, 1967), the multi-grounded theory

¹⁹ The interviews were in the original language (Oriya) hence I transcribed (non-verbatim) the English translation from my interpreter and my questions which were also formulated in English.

integrates the use of existing theories to inform an empirically grounded analysis. Therefore, a multi-grounded approach would generate theories from empirical data informed by previous theoretical knowledge. As observed by Goldkuhl and Cronholm (2010), ignoring existing theory could lead to ‘reinventing the wheel’ instead of building on established research. While I maintained an open-minded attitude towards empirical data, I was informed by existing theories and frameworks and was interested in generating knowledge that could be linked to (and challenge) them. A limit of adaptive capacity assessments that was highlighted previously in this thesis is that they are mainly deductive and theory-driven. As such, I sought to generate empirical knowledge that, instead of being completely detached from, could resonate with those frameworks, challenging assumptions and fostering new approaches.

I analysed the data drawing on existing concepts using both a priori and iterative coding, letting the data speak but grounding the analysis in the theoretical background that inspired this research. I maintained a flexible approach and I was ready to recode if the data were pointing towards a new direction without being constrained too much by theories. In fact, my initial coding during the fieldwork was organized around the five capitals of the Sustainable Livelihood Framework (see Chapter 2, section 2.2.5) until I realized that it did not fit the data and was limiting interpretation. I therefore recoded again constructing new categories that led to new themes. As put by Kelle (2007): “[...] researchers always have to draw on previous theoretical knowledge which provides categorical frameworks necessary for the interpretation, description and explanation of the empirical world” (Kelle, 2007).

3.6 Limitations of the research

The methodology of this study has been carefully designed to address the research questions and to ensure that an intersectionality approach could be maintained throughout the research. The study has however potential limitations that may have constrained different stages of the research process. As a qualitative researcher, I was the primary ‘instrument’ in data collection and my positionality, as well as my subjective point of view, may have influenced the way I collected, analysed and interpreted the data. Issues related to positionality, subjectivity and cross-cultural interpretation of findings are discussed in more depth in the next section (section 3.7).

As described in the methods discussion (section 3.4), all research tools come with their own limitations. This is particularly the case for FGDs and participant observation. Even though the focus groups were organised by gender, other types of power relations were at play amongst the group participants. For instance, younger women and men as well as participants belonging to lower castes were often sitting at the back and were rarely vocal. Younger daughters in-law would not speak if their mother in-law was also attending the group discussion. To partially address this imbalance, which was observed during the first fieldwork in 2015, I adjusted the process when I returned in 2016 by integrating visual aids that aimed to break down some of these power dynamics. I also paid better attention to facilitating the discussion trying to elicit everyone's participation while also being respectful of local social and cultural norms and codes of behaviour (see section 3.4.1). As highlighted earlier, attendance of the focus groups was on a voluntary basis which presented possible representation issues. The groups almost always reflected a good mix of age and castes. However, when that was not the case, the interviews were pivotal in enhancing inclusion and applying an intersectionality lens. In the interviews I had more control of the 'sampling' and the respondents were selected on a snowballing basis and/or with the help of the village leader and purposefully, so as to ensure that they could represent an ideal intersection of castes, ages, marital status, motherhood and household typology (extended vs. nuclear).

Participant observation was critical to gain a good understanding of the context and people's relations in everyday life situations. As a supplementary tool of data collection that complements interviews and FGDs, it has been useful with triangulating data and capturing non-verbal and extra-linguistic behaviours. This was particularly the case in situations where power relations played a weight in constraining people's verbal expressions (e.g. presence of the mother in-law in the room, tension in the family/household). Questions of legitimacy and positionality arise in the use of participant observation, especially as I am a White woman from an educated background and a Global North country, doing research in an international field context (Dowling, 2005; Sultana, 2007). All these characteristics have inevitably influenced the way I interpreted people's behaviours and also the way people behaved in front of me resulting in potential limitations and biases (see section 3.7.1). As I explained earlier in this chapter (section 3.4.3), while I acknowledge these limitations I embrace the feminist view of 'experientially based knowledge' that sees the researchers' emotions, values and identities as part of the process of generating knowledge and as a means to build trust with the research participants (Stanley & Wise, 2002). An additional

remark on participant observation and on the study limitations, more in general, goes to the duration of the fieldwork. The research would have benefitted from a longer fieldwork to dive more in-depth in the life of the villages, observe social changes over different agricultural and weather seasons and build stronger trust relationships (Brockmann, 2011). Funding and personal reasons, however, did not allow for a longer duration (section 3.3).

Before moving on to discussing ethical considerations and then on to the analytical chapters, a final remark should be made about the scope of this research. This study does not aim to generate findings that are representative of Odisha, or even the Delta. The objective is rather to explore some of the key ways in which gender, migration and climate adaptation interact, by zooming into the social, cultural, economic and physical characteristics of three villages which may not always be representative of the broader context of Odisha.

3.7 Ethical considerations

This research obtained ethical approval from the University of Southampton in July 2015, prior to the initial visit. The principle of confidentiality applies to all the data collected and used in this study, including visual data. At the beginning of each interview and FGD, my interpreter presented the purpose of the research, clarified that we were not affiliated to any organisations and gave the participants the opportunity to raise questions. While KII gave written informed consent, in the study villages consent was given orally, as handing over an information sheet or consent form would have been contextually and ethically inappropriate, not least as many of the potential participants could not read. The village respondents were all anonymised with the use of pseudonyms and by avoiding disclosure of identifiable information. For KII, only the name of the interviewee's organization was retained as specified in the informed consent. There was an explicit request from the research participants and the community leaders, in all three sites, to use the real name of the village to raise awareness and voice their perspective to an outside audience. Research participants may in fact see the study as a place to be heard and become visible (BSA, 2017). Moreover, I could not fully anonymize the location as the nature of this study requires a detailed description of the biophysical characteristics of these places, which could make them recognizable. Considering these factors, pseudonyms are not used for the villages. The following sections further offer some reflections on key ethical issues that emerged during the study.

3.7.1 Positionality and subjectivity

Doing research in a developing country such as India, as a foreign, White and educated woman situated in a Global North context, poses several ethical dilemmas. Positionality is one of the most evident challenges as it sets the tone of the research and shapes social and professional relationships in the field (Chacko, 2004; Godbole, 2014). As pointed out by feminist researchers, different aspects of identity generate many forms of power relationships that the researcher should be attentive to when conducting fieldwork (Maynard, 1994; Moss, 2002). Research methods, interpretation and knowledge are all influenced by how one relates to the research participants. Race and gender were tangible aspects of my identity that inevitably influenced the way I was perceived by the community. Being Western, white and highly educated put me immediately in a position of inherent power and privilege (Sultana, 2007). The fact that I was reaching the villages by car and that I had with me gadgets such as cameras added to this perception of being wealthy and privileged. However, when I started to know the communities and to talk with people, other aspects of my identity emerged that changed attitudes towards me. The fact that I was married had a positive impact on my relationship with women who started to look at me as less of an outsider. In contrast, doing fieldwork alone (without a man) and being childless generated less favourable reactions. In the study area women cannot leave the village without a man accompanying them and they usually become mothers in their early 20s.

Furthermore, I conducted my fieldwork in India where the caste system is embedded in a complex net of hierarchies and power relations that needs to be accounted for when considering one's positionality (Godbole, 2014). If in terms of caste I was considered an outsider, I was accompanied in the field by my interpreter – a highly educated urban woman, from an upper-caste, and by a community facilitator – a SC educated man. Although my position as outsider in the caste system could have been beneficial in breaking down some power relations, the identities of the other members of the research team added a further layer of complexity. The insider-outsider boundary is neither fixed nor static and one could be simultaneously both and neither, which was perceptible during my presence in the communities (Britton, 2020; Mullings, 1999).

3.7.2 Whose voice?

The language barrier is a critical component of this fieldwork. It could have influenced the quality of the data (I had to rely on an interpreter, and I cannot be sure that she reported the informants' words literally) but also raises questions about representation and has ethical implications. Although the dilemma of representation applies to all qualitative researchers, not only to those working in a foreign language, it can be particularly critical when the researcher has to play the role of mediator between two languages (Gent, 2014). Maintaining the richness of the original language is problematic, if not impossible. Indeed, the respondents' voice is interpreted twice; once when it is translated in the field (from the interpreter to the researcher) and the second time when it becomes academic prose. In my case, since English is not my first language, the information could have been unintentionally filtered through three different idioms. Similarly, my interpreter could have re-interpreted the informants' words when translating into English.

The use of second and third language emphasizes ethical questions of whose voices are represented. Because languages are cultural and context-specific, translations can lead to biases and misinterpretation (Twyman et al., 1999). Being aware of these issues allowed me to think critically about how to conduct analysis and report the findings. In order to minimize biases to the highest extent, I asked my interpreter to look at my interview transcripts while listening to the voice recorded interviews. This allowed us to spot any misinterpretations and further enrich the transcripts. In fact, because her written English was better than her spoken English, she was able to add details that were skipped during the translation at the time of the interview. All this to show that findings, rather than 'emerging' on their own, are generated and produced through processes that involve, at times several, actors.

3.7.3 Reflecting on the fieldwork experience: who gains?

The methodology for this study was designed with an intent to address the imbalance in gains (Fagerholm, 2014) and the information needs, while also potentially benefitting the participants by enhancing information sharing (e.g. during the discussions). The motivation for this study stems from my professional experience in the sector of international development which has fuelled my interest in gaining a deeper understanding of migration and adaptation processes, especially from a gender perspective. Although I hope that this enhancement in knowledge could inform policies and programmes increasing their

effectiveness and inclusiveness, hence in turn benefit local people, I am also aware that what I gain from this process far exceeds the participants' gains. While I will benefit from completing a doctoral degree, the participants do not have any similarly concrete benefits.

This has raised a moral dilemma for me and challenged me during the fieldwork. Despite having previous experience conducting research in similar developing country (especially rural) contexts, I was part of a bigger team of international and local people within the framework of international development and humanitarian programmes, where the respondents could see or foresee concrete support for their needs. As such, the effort that the informants put in participating into the research activities was compensated by material gains (i.e. involvement in project activities, infrastructure, capacity-building etc.). This time I had to face the moral dilemma of requesting the participants' time and commitment knowing that I was going to 'give back' very little (Staddon, 2014). In addition, although I was clear about the purpose of the research throughout the fieldwork in order to not raise false expectations, the fact that I am foreign and white instilled a belief that I could mediate with NGOs or government officials to provide some form of help and support. All of which complicated my moral conflict even further. Nevertheless, this is not to suggest that all the participants have necessarily lost from the process.

Despite these concerns, I strongly believe that the use of participatory methods and the strong focus on the participants' agency that characterise this study had the potential to have positive effects on the participants on many levels. Firstly, participation in focus groups can have positive long-term psychological benefits for individuals, as they offer an opportunity to find emotional support by sharing experiences with other participants who may have endured similar problems (Morchain et al., 2015). This could lead to friendship and relationships that last long after the research is completed and can strengthen the social capital of an individual as well as contribute to their personal empowerment. Secondly, participating in activities and joint discussions is a confidence boost particularly for women in this context, who normally rarely have the opportunity to report their challenges and successes. Some of the women who participated in the PRA exercises and FGDs told me that it was a way for them to gather together and discuss problems they do not usually talk about, as well as an opportunity to free their mind from their daily chores (usually when they gather together they are doing one of their daily tasks such as washing the dishes in the pond). In

addition, the interest of the researcher in understanding their reality can enhance their confidence by making them feel important and their stories worth being heard. This is an excerpt from my fieldnotes (October 2016):

[...] today, a middle-aged man said to me, smiling: *“You come from so far to listen to our problems”*. There is no informed consent that dissolves the moral issues that sometimes haunt me. I will always feel that underlying sense of guilt of ‘stealing’ people’s stories without returning anything concrete. But today that man reminded me that listening can be a gift. That using my privileged position to tell stories that otherwise wouldn’t be told can be my little contribution. I hope I will do justice to the voices of the people I met; to their stories of hopes, struggles and everyday life in between.

Finally, participatory activities can represent an opportunity to reflect upon women’s and men’s roles, burdens, challenges and needs – as observed in section 3.4.1. – which can be a first step to initiating processes of social transformation (Morchain et al., 2015).

3.8 Conclusions

Drawing on feminist political ecology theories, this study embodies the concept of diversity in the analysis of human-environment relationships. The approach that it takes is therefore focused on investigating multiple perspectives, recognizing that the way people experience and interpret climate and environmental changes is shaped by their identities and embedded within social and power structures. As discussed in section 3.2, this study applies intersectionality as an analytical category to examine heterogeneity through multiple and intersecting axes of power and social differentiation.

The primary data collection for this thesis was conducted in three villages in the northern part of the Mahanadi Delta, in Odisha. Section 3.3 illustrated the case study selection and study sites and discussed the fieldwork process. It follows a discussion on the research methodology (section 3.4). This study gathered data through a combination of different qualitative methods to permit triangulation and grasp different perspectives. While semi-structured interviews with women in the villages enabled in-depth insights at individual, household and intra-household level, the focus group discussions were pivotal to highlight

community dynamics and to integrate men's voice in the analysis. Finally, key informant interviews helped to further contextualise and include the viewpoint of stakeholders engaged in rural development and climate adaptation sectors at local and state level.

A multi-grounded approach was adopted for the data analysis whereby I gave central importance to the empirical data, while being informed by existing theories and frameworks (section 3.5). Finally, the chapter concluded with a reflection on the research limitations (section 3.6), some ethical considerations and a further reflection on the fieldwork and the research process (section 3.7). The next chapter continues with a context analysis of Odisha, the Delta and the study area (Chapter 4).

CHAPTER 4. ODISHA AND THE MAHANADI DELTA

4.1 Introduction

This chapter provides an overview of the geo-climatic, demographic and socio-economic context of Odisha and the Mahanadi delta to situate the findings of this study within a broader setting. The analysis draws on secondary sources and Census data and is carried out at country, State and Delta level. The chapter also provides insights into the district of Kendrapara which is where the study villages are located. The analysis is disaggregated by gender and caste whenever possible and when data were available.

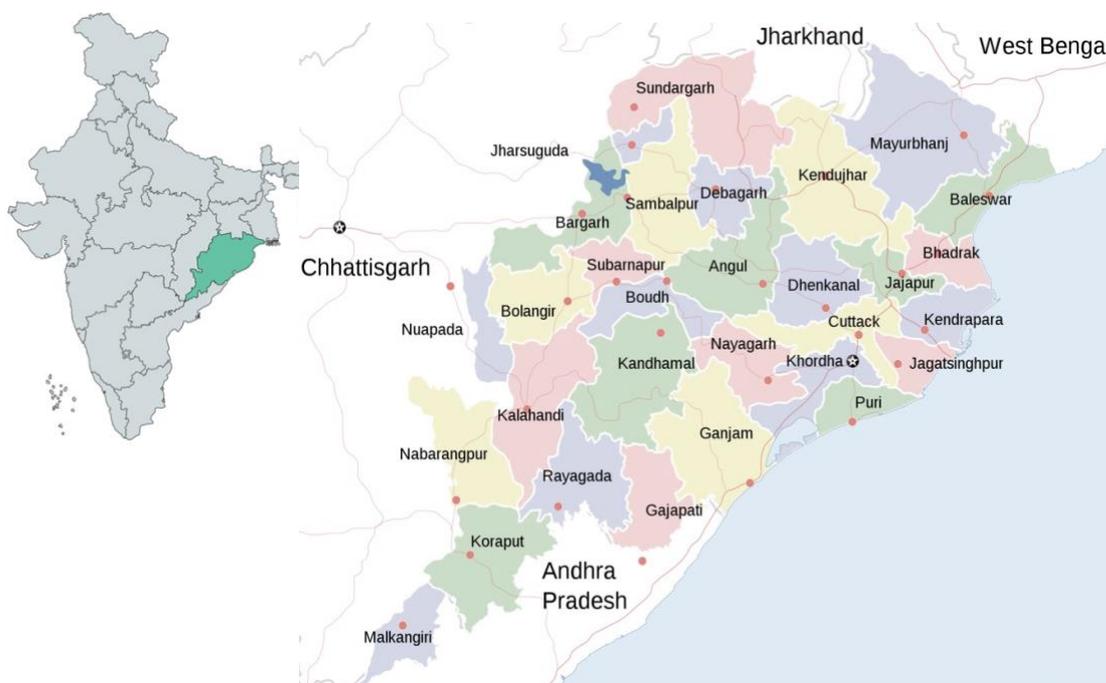
The chapter begins by looking at the geo-climatic conditions of Odisha zooming into the Delta and its bio-physical vulnerability (section 4.2). It follows an overview of the agricultural sector and rural livelihoods (section 4.3), including insights into land utilisation, landholding and land ownership in Odisha which have important implications for socio-economic inequality, income and agricultural productivity. Section 4.4. delves into demographic features to provide insights into gender, caste and population distribution in rural and urban areas. This section also illustrates the administrative structure of Odisha to help understand the different levels of governance. The chapter continues with a broader analysis of the socio-economic context and multidimensional poverty in the State including reflections on inequality across various aspects of human development including health, food and nutrition security and education (section 4.5). Finally, the chapter zooms into the employment and underemployment situation in Odisha (section 4.6). This final section looks at labour participation by gender and caste, in formal and informal employment and pays particular attention to the agricultural sector which remains the largest employment sector in rural Odisha.

4.2 Bio-physical vulnerability of coastal Odisha

Odisha is located in the eastern part of India, in the country's most cyclone-prone region (Figure 8). The state has a long coastline of about 480 Km (8% of the total India coastline) that overlooks the Bay of Bengal, and overall, benefits from abundant water resources and nutrient-rich soil types (GoO, 2022). Ranking fifth in the list of most flood-prone states in India, it has witnessed a wide range of climate extremes over the last decades that have

severely affected people’s lives and livelihoods (Hazra et al., 2019). Odisha is hit by cyclones, floods and/or droughts almost annually. In the timespan of 19 years, between 2000 and 2019, it has experienced 15 years of floods and eight years of drought (GoO, 2017).

Figure 8. Administrative map of Odisha showing the 30 districts of the State, including five coastal districts within the Mahanadi Delta



Source: Maps of India (accessed on 4 September 2019)

Coastal communities, in particular, experience frequent high intensity floods caused by heavy rains, cyclonic wind and tidal waves. Tropical cyclones are a common phenomenon. Odisha is twice as likely to be hit by cyclones as other eastern states in India. From 1891 to 2021, some 102 cyclones of medium to severe intensity have crossed the coast affecting life and properties (Sarkhel et al., 2019). After the Super Cyclone that hit Odisha in 1999 causing thousands of deaths and economic devastation, the government set up the Odisha State Disaster Management Authority (OSDMA) and has since taken action to strengthen disaster prevention and preparedness measures.²⁰ While the loss of human life is now rare thanks to the presence of multipurpose cyclone shelters and early warning systems (Walch, 2019),

²⁰ Odisha was the first state in India to draft a State Action Plan on Climate Change in 2010 which was later updated into a more comprehensive Climate Change Action Plan 2018-2023. It was also the first Indian state to have an Early Warning System for coastal communities exposed to the risk of cyclones and tsunamis. More recently, Odisha has formulated a Climate Budget (2020-21) to support programmes and initiatives tailored to enhance climate resilience

tropical cyclones continue to cause significant damage to housing conditions and lead to properties and livelihood losses which further increase the vulnerability of coastal communities.

Coastal vulnerability and disaster risk is higher in the area that stretches over the Mahanadi delta (Hazra et al., 2022). The Delta is formed by a network of three rivers (Mahanadi, Brahmani and Baitarini) and comprises five coastal districts (Puri, Khorda, Jagatsinghpur, Kendrapara and Bhadrak). The geo-climatic conditions of the Mahanadi delta and its coastal economy, which relies on natural resources and climate-sensitive livelihoods, make the Delta one of the most climate-vulnerable in the world (Hazra et al., 2022; Syvitski et al., 2009). In addition to weather extremes such as floods and cyclones, sea-level rise, saltwater intrusion, soil erosion and embankment collapse are also affecting life and livelihoods of the coastal population of Odisha (Hazra et al., 2022). The northern part of the Delta (Kendrapara, Bhadrak and Jagatsinghpur) is at higher risk of strong cyclonic winds while Rajnagar, in Kendrapara, is one of the zones in the Delta witnessing the highest erosion rate (Ibid.). Coastline erosion gradually increases from south to north leading to inundation, contamination of fresh water and high levels of soil salinization that alter agricultural soils and agricultural production (Ghosh et al., 2019; Hazra et al., 2019; Mukhopadhyay et al., 2018). Entire villages and hectares of land have been swallowed by the sea. Along the coast, some villages have lost up to 60% of their land (Gaurav & Mishra, 2016). Sathabaya, a cluster of seven villages in the district of Kendrapara, is one of the most iconic examples in the region with land and homes wiped out by sea level rise and coastal erosion (Senapati, 2019). It is important to emphasise that the loss of agricultural land and mangrove forest cannot be uniquely attributed to sea-level rise and changing climatic conditions. Human settlements and human activities (e.g. aquaculture, infrastructures) contribute to the decline of sediment deposition in the Delta and accelerate coastal erosion by also increasing the vulnerability of coastal communities. Mangrove forests, for example, represent a natural coastal protection against cyclones and tidal waves (Menéndez et al., 2020).

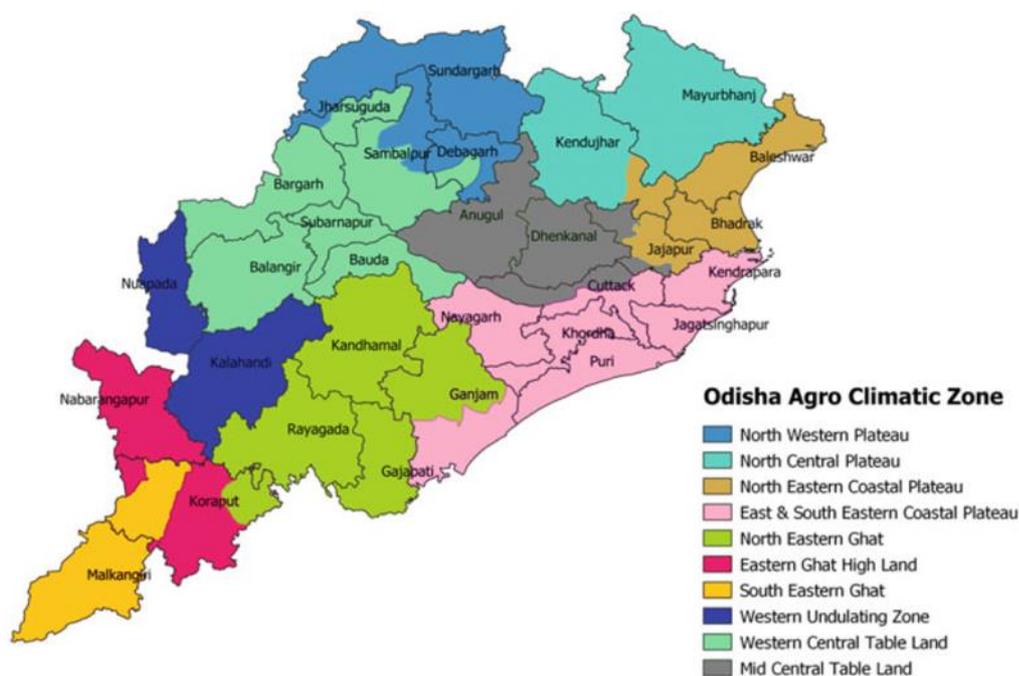
In terms of climatic conditions, Odisha has a typical tropical climate characterized by high temperatures, high humidity, mild winters and medium to high rainfall (D. Mishra & Sahu, 2014). The state has three meteorological seasons: winter (October-February), summer (March-June) and the monsoon season (July-September). The cropping season is divided into two seasons, namely *Kharif* from July to October and *Rabi* from October to March as

described more in detail later in this chapter (Section 4.6). Changes in climatic patterns, such as lower pressure, higher summer temperatures and erratic rainfall, observed in the last decades, are disrupting cropping seasons and affecting agricultural production (D. Mishra & Sahu, 2014).

4.3 Agriculture and rural livelihoods

Odisha is characterized by ten agro-climatic zones based on climate, soil, rainfall and cropping patterns. Of these, the Delta comprises the East and South Eastern Coastal Plateau (Figure 9). Agriculture sub-sectors include crop, livestock, fishery and forestry.

Figure 9. Odisha's agro-climatic zones



Source: (Hoda et al., 2021)

Throughout the state, agriculture is dominated by rice cultivation and aquaculture as the main livelihood and subsistence activities. Among cereals, rice is the predominant crop accounting for nearly half (48%) of the gross cropped area (Hoda et al., 2021). The coastal belt of Odisha accounts for about 38% of the total rice area in the state (S. R. Das, 2012). The paddy crop phases can be divided into the *Kharif* growing season beginning towards the end of June and ending in November and the harvesting season that, in a normal year, goes from November to December. *Rabi* crops are grown from November until March which is

the harvesting period. April and May are the summer months and correspond to the lean season (see Table 7).

Table 7. Paddy crop phases in Odisha

June	July	August	September	October	November	December	January	February	March	April	May
KHARIF											
Nursery preparation	Sowing/transplanting	Plant growth/flowering			Maturity and harvesting						
					RABI						
					Nursery preparation	Transplanting	Plant growth	Maturity	Harvesting		
										SUMMER	
										Lean season/soil preparation	

Source: Author's elaboration

Pulses constitute only 2% of the gross value output for agriculture. They are grown mainly in in-land districts during the *kharif* season. In coastal districts pulses are grown in rice fallows during *rabi* season when moisture conditions are favourable (Hoda et al., 2021).²¹ Production of pulses is mostly concentrated in irrigated land of the Mahanadi Delta, in the districts of Cuttack, Puri and Koraput. *Kharif* is the most important growing season, especially for small and marginal farmers that have no access to irrigation and equipment necessary to grow irrigation-dependent *Rabi* crops.

The rest of the agricultural production consists of non-paddy and horticultural products. Odisha ranks first in the production of sweet potatoes in India and is also one the major producers of onions (GoO, 2022). Other vegetables that are produced include brinjal, tomatoes, cabbage, okra and cauliflower. Fruits cultivation represents 4% of Odisha's gross cropped area and is dominated by mango which contributes to the largest share of fruit production (33%), followed by banana, lime/lemon, watermelon, guava and papaya (Hoda et al., 2021). Horticulture has a higher market value than foodgrains. However, its potential in the state is limited by the lack of organised marketing and cold storage facilities for perishable fruits and vegetables.

Livestock is an emerging sub-sector that has witnessed a significant growth in the last one and a half decade. Its contribution to the GDP in 2020-21 was 7%. Around 1.3 million tonnes

²¹ Rice fallow is a crop rotation system in which rice is grown during the *kharif* season and left fallow during the *rabi* season when short duration crops, such as legumes, are grown. The main pulses cultivated in Kendrapara are greengram and blackgram (OUAT, 2016)

of milk are produced annually by the bovine population which is composed of cows and buffalos (GoO, 2022). Backyard poultry plays an important role in providing proteins and contributing to improve the nutritional status of rural households. Small-scale poultry is, however, still underdeveloped despite bearing good potential.

Fishery is an important sector which has seen a remarkable growth in the last decade and represents almost 12% of the primary sector in Odisha in 2021-22 (GoO, 2022). Freshwater fish constitutes the majority of the total fish production (66%), followed by marine fish (20%) and brackish water fish (14%) (Ibid.). Fishing is an important source of livelihood and makes a significant contribution to food and nutrition security in the state. Odisha has one of the highest fish consumption rates in India – 94% of people consume fish according to the National Family Health Survey (2015-16) (GoI, 2017). The long coastline, rich in mangroves and seagrass, provides vital breeding and feeding areas for a variety of marine species that contribute to the state’s commercial fishing (Hazra et al., 2022). The annual fishing bans, however, limit marine fishing activities, including small-scale fishing and fishing for self-consumption.²²

4.3.1 Agriculture productivity

Agriculture productivity in Odisha is overall low compared to the national average. Productivity for major crops was around 28% less than all-India level in 2019-20 (GoO, 2022). Rice productivity is among the lowest in the country, especially in the coastal districts, which have lower productivity rates than other parts of Odisha. In the Delta, Kendrapara is the worst performing district in terms of rice productivity (Jeeva et al., 2019).

Various factors contribute to Odisha’s slow or even negative growth rate in agricultural production. First, as discussed earlier in this chapter the state has historically had high exposure to climate risks which has been exacerbated under changing climatic conditions (Section 4.2). Other contributing factors include low access to agricultural inputs (e.g. fertilizer, climate-resistant seeds) and scarce irrigation coverage. The irrigation ratio in Odisha has consistently remained well below the national average, in particular for crops

²² Along the coast of Odisha, there are two annual fishing bans: the first is a seasonal nationwide ban (April-June) imposed to allow the breeding of fish; the second ban lasts approximately 7 months, from November to May, and applies only to specific areas to protect turtle nesting sites.

such as rice (30.9% Odisha vs. 60.6% all-India average) (GoO, 2022).²³ During the *Kharif* season, only 33% of the cultivated land is irrigated. Scarce or insufficient irrigation infrastructures constrain agricultural production, even more under the increasingly erratic and uneven distribution of rainfall in Odisha of the past few years (IMD, 2020). Finally, agricultural productivity in Odisha is affected by low levels of mechanization. Smallholder farmers largely practice manual sowing and only a very small share of farmers use power operated threshers. Tractors are still considered too expensive to hire and difficult to find during ploughing and harvesting (G. G. Rao, 2016). While the government has introduced various programmes to subsidise the purchase of agricultural machineries to improve productivity and income, the uptake remains overall low. The land holding and land fragmentation situation in Odisha, remains one of the most constraining factors to the dissemination of farm mechanization. Small and marginal farmers lack the financial and technical capacity to access, use and maintain machineries and they often have poor access to information regarding the availability of suitable tools and technology (Das et al., 2020). The issue of landholding that represents both a source and a cause of socio-economic inequality is further discussed in the next section.

4.3.2 Land use and land holding

The agriculture sector in Odisha is dominated by marginal farmers and smallholders.²⁴ As per the 2015-16 Agricultural Census, marginal and smallholders constitute respectively 74% and 18% of the total holdings respectively (GoO, 2019). In Kendrapara, marginal holdings exceed 65% of the total holdings (Ibid.). The size of holdings has been declining over time reaching an average of 1.16 hectare per unit (in 2010-11) pointing to a decline of medium and large size holdings. The reduction of holdings size can be attributed to various factors including increasing population pressure that has led to partitioning of land; environmental factors which contribute to land degradation and land losses; as well as surplus land distribution policies to landless households (Gaurav & Mishra, 2016).

A closer look at the distribution of operational landholdings across caste shows that SCs accounted for only 15% of the total number of operational holdings in 2015-16 while STs

²³ Irrigation ratio is the gross irrigated area as a proportion of gross cropped area.

²⁴ Farmers are classified as marginal when they cultivate between 0.50 and 1 hectare of land and small when they cultivate between 1 hectare and 2 hectares of land (GoO, 2019)

operational holdings constituted 30% of the total (GoO, 2019).²⁵ The size of SCs holdings is also lower than the state average and the quality of the land is generally poor. The average land size of STs is higher than SCs, therefore they have a relatively lower proportion of marginal holdings (68% vs. 82% respectively). However, their land is of lower quality and holds poor returns from cultivation (Gaurav & Mishra, 2016). It is worth mentioning here that the issue of land acquisition for STs is highly controversial as many STs living in forested areas continue to lack legal entitlement over the land they have been cultivating for decades (UNDP, 2008). Inequality in land holding and assets distribution constrain access to credit for small and marginal farmers. Landless households are at an even greater disadvantage. The percentage of landless and near landless population in the state has steadily increased in the last decade (Sarap & Sahu, 2016).

A significant gender inequality is observed in landholdings. In the state, the vast majority of land is owned by men (95%) with women representing only a small percentage (4%) (GoO, 2019). While this is the case in all India, Odisha shows lower percentages of landholdings operated by women. The figure is even lower if only operational holdings are taken into account (3.3% owned by women). Cultural constraints, social sanctions and customary law still prevent equal access to land for women who are often under pressure to cede their legal rights to their brothers (Gaurav & Mishra, 2016).

A final remark on land holding should be made with regards to sharecropping that represents the majority of cultivated land (60-70%) in coastal Odisha (Dalei & Dutta, 2015). According to the 2015-16 Agriculture Census, sharecropper farmers are prevalently marginal and small cultivators (GoO, 2019). Sharecroppers have little or no tenancy rights and, in most cases, they do not have direct access to credit, inputs (e.g. fertilizer, seeds), trainings and agricultural schemes which are normally provided to landlords. In 2020, a new legislation has been drafted in Odisha to officially recognize sharecroppers and facilitate leasing of agricultural land.²⁶ This legislation would enable sharecroppers to access credit institutions, insurance, disaster relief, subsidies and a set of support services provided by the government.

²⁵ Operational holding refers to all land which is wholly or partly used for agricultural production and is operated as one technical unit under the same management (ibid.)

²⁶ The legislation called 'Odisha Agricultural Land Leasing Act' is still under discussion and has not been adopted as per last search in September 2022.

4.4 Demographics and population

According to the latest Census administered in 2011, Odisha's population reached around 41 million people, 18% of which live in the Mahanadi delta (Census, 2011).²⁷ The total population in the coastal districts is rapidly increasing, intensifying the population density of around 600 persons per km² and increasing demand for coastal resources (Hazra et al., 2019). Population estimates indicate a current total population of 47 million people in Odisha and 9.1 million in the Delta, projecting a growth of 14% for all Delta districts in the period 2011-22 (Gol, 2019b).

Most of the population in Odisha (83%) lives in rural areas. The share of rural population in the state is higher than in all India (68%) (Census, 2011). The Delta shows a similar rural-urban distribution with Kendrapara being the district with the lowest urban population rate (94.2% of the population lives in rural areas) (PCA-Odisha, 2011). The urban population is slowly increasing, especially in some areas of Odisha that have been witnessing a process of rapid urbanisation and industrial development such as in the capital city of Bhubaneswar and around the port of Paradip in Jagatsinghpur, one of the major economic hubs on the east coast of India.

The sex ratio of Odisha is 976 (i.e. for each 1000 males) which stands below the national average of India (of 940). A similar sex-ratio is seen in the Delta (Census, 2011). In terms of caste distribution, SC and ST account respectively for 17% and 22% constituting nearly 40% of the total state's population (Ibid.). Odisha has the third highest ST population in India. However, ST are mainly concentrated in the southern, central and northern districts. These districts also have an overall higher share of SC compared to all other districts. In the Delta the presence of ST is notably low, except for the district of Khorda, whereas SC represent 20% of the total population (see Table 7).

²⁷ The new Census which was to take place in 2021 has been delayed due to the COVID-19 pandemic.

Table 8. Population in the Delta (2011)

DISTRICT	Area in Km ²	Density	Total pop.*	% of Total pop.	% of Total Male pop.	% of Total Female pop.	% of SC	% of ST
Puri	3,50	485.2	1,698,730	21.1	21.2	21.6	21.5	3.6
Bhadrak	2,45	614.6	1,506,337	18.7	18.6	19.3	22.1	18.0
Kendrapara	2,48	580.8	1,440,361	17.9	17.6	18.7	20.4	5.6
Jagatsinghpur	1,66	681.2	1,136,971	14.2	14.1	14.5	16.4	4.7
Khordha	2,75	817.3	2,251,673	28.0	28.5	25.9	19.6	68.1

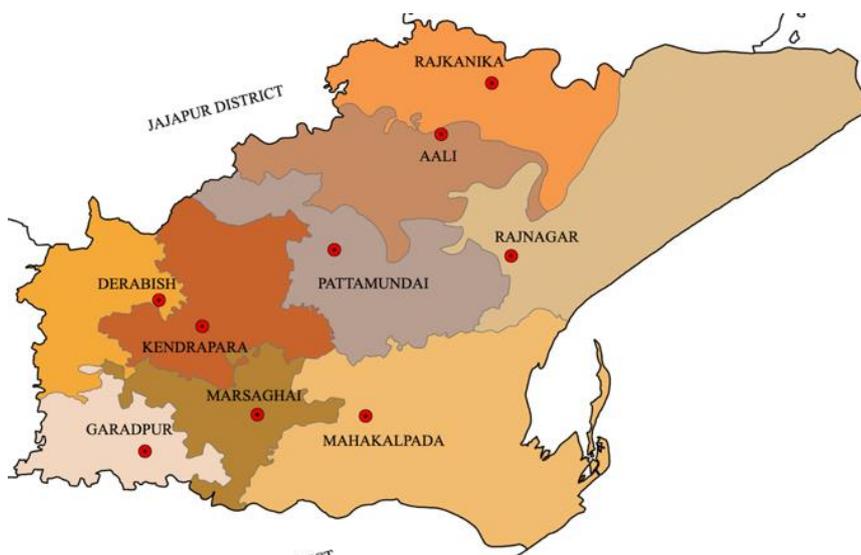
* Pop: Population.

Source: Author's elaboration (Census, 2011)

4.4.1 Administrative structure

Odisha is divided into 30 Districts, 58 sub-divisions, 317 Tahasils, 314 blocks, 6,802 gram panchayats (GPs) and 51,313 villages.²⁸ The district of Kendrapara, where fieldwork for this research took place, comprises one sub-division (Kendrapara), which in turn has nine blocks, 249 gram panchayat and 1570 villages (see Figure 10).

Figure 10. Block map district: Kendrapara



Source: GIS Odisha <https://www.gisodisha.nic.in/Block/KENDRAPARA.pdf> [last accessed]

The study villages belong to the block of Rajnagar and two different gram panchayats within that block.

²⁸ Gram Panchayat is a village or a group of villages divided into smaller units called wards. The Gram Panchayat is represented by a president called 'Sarpanch' elected every five years by the ward members.

4.5 Socio-economic context

Odisha is one of the poorest states in India with 36% of its total population living below the poverty line compared to the country national average of 26% (Anwarul et al., 2017). Its Gross State domestic Product (GSDP) has seen an impressive economic growth in the last two decades (2000-2020) and since 2013 Odisha has had the highest decline in poverty among Indian states (Padhi & Panda, 2020; Panda & Padhi, 2021). The economic growth has mainly been driven by the service, manufacturing and mining sectors. Agriculture, as discussed later in the chapter, makes the lowest contribution to the GSDP despite being the main sector of employment (GoO, 2022).

Poverty reduction is unevenly distributed both within the state and across social groups leading to persistent inequality. According to the 2011 Census, the poverty head count ratio in Odisha remains much higher than in all India (57% vs. 37% respectively) and it is significantly more pronounced in rural areas than in urban areas (61% vs. 38% respectively) (Misra, 2016). Within Odisha, the southern and northern districts have a much higher incidence of poverty than coastal districts. The latter had experienced a considerable poverty reduction by 2011-12 (Misra, 2016; S. Panda & Padhi, 2021). Across caste, STs and SCs are the poorest social groups. Interestingly, in the last 20 years the within-group and between-group inequality has decreased in rural areas while it has seen an increase in urban areas (Panda & Padhi, 2021). Public welfare schemes and other institutional and policy interventions targeted at rural areas and aimed at distributive equity may have contributed to a decline in socio-economic inequality (Misra, 2016).

A closer look at human development and inequality conditions provides a more comprehensive understanding of Odisha's socio-economic context. Despite its significant GSDP growth, the performance of Odisha in human development has continued to be poor with the state ranking 13th among the 14 non-special category states in India.²⁹ With the exception of education where Odisha outperforms other states in India, the other dimensions of human development have overall a low performance (Behera et al., 2019). The health sector in particular suffers from persistent deficiencies including poor quality of care, shortage of staff, limited access in rural areas and wide disparities of access to

²⁹ Special Category Status (SCS) consists in preferential treatment in the form of central assistance and tax breaks given to certain disadvantaged states in India. Initially the status was granted to Assam, Nagaland and Jammu & Kashmir but since the concept was first introduced in 1969 more states have been included.

healthcare for lower castes and other disadvantaged social groups (Yip et al., 2021). In the latest Health Index Report published in 2021, Odisha features at the bottom of the list among the worst performing states (Gol, 2021). Despite health infrastructures being overall good, the healthcare system suffers from severe shortages of healthcare workers. After finishing their degree and training in Odisha, many medical graduates move to other Indian states for better wages and career prospects (Rout & Hota, 2016). Maternal and child health is particularly poor, especially among SCs and STs. According to the National Family Health Survey (NFHS-5) 2019-21, the state infant mortality and under-five mortality had a remarkable reduction in the last decades. Maternity mortality ratio has, instead, seen a much slower decline in the same period (Gol, 2022). Gender and caste are important determinants of access to healthcare and healthy diets. For example, child mortality is higher among SCs and STs as compared to GCs (Thomas et al., 2015). Although Odisha has achieved a significant reduction of malnutrition, access to food is uneven across social groups and between rural and urban areas. Energy and protein intake has significantly improved since the introduction of the Public Distribution System (PDS) but remains low in rural areas and among vulnerable groups (GoO, 2020). Health and hygiene practices and access to safe drinking water are among the underlying, non-food related, factors of malnutrition. Odisha has the lowest access to toilet facility in India. Open defecation and lack of sanitation facilities, for example, are found to contribute to high levels of malnutrition in women and children (Ibid.). As mentioned earlier, education is one of the few aspects of human development where Odisha has overall a good performance. As per the 2011 population Census, literacy rate in Odisha is 72%. The male literacy rate (81%) is higher than female literacy rate (64%). The coastal districts have the highest literacy rates and lowest gender gap compared to the state average confirming the socio-economic disparities between coastal and non-coastal districts already noted in this chapter. In the Delta, literacy levels stand at 76% of the population, over half of whom are men (54%). Kendrapara, the study district, has the highest gender gap in education in the entire Delta. In terms of caste, the number of educated SC is only slightly lower than other castes while ST have the lowest literacy rate (only 44%) and their education level is generally limited to primary and middle-level (Census, 2011).

4.6 Employment and underemployment

The majority of the population in Odisha lives in rural areas where agriculture represents the main source of income and the primary employment sector (61.8% of the workforce)

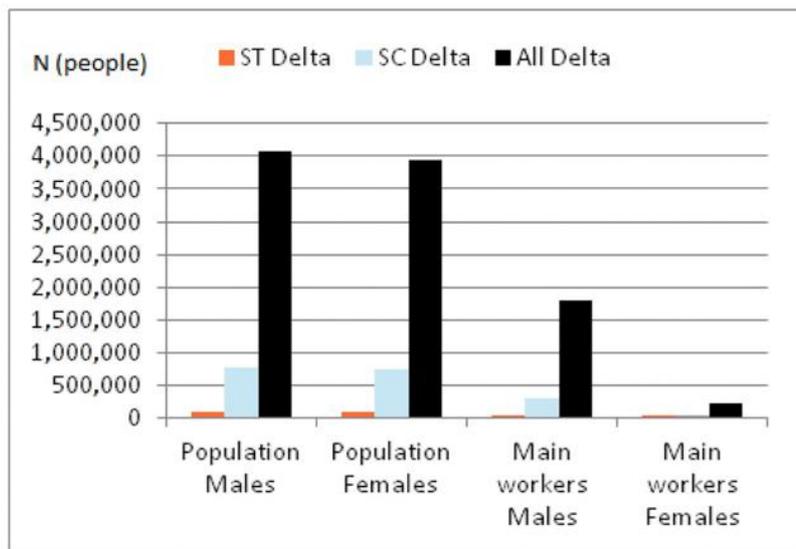
(Census, 2011), more on which shortly. . A significant gender disparity is observed in all employment sectors. The female labour force participation rate in Odisha has been historically low at 15% in rural areas, which is lower than the all India figure of 18%, according to the Period Labour Force Survey (PFLS) 2017-18 (GoI, 2019a). Of the 34% of Odisha's population in formal employment, only 18% are women (GoO, 2016). In rural Odisha, the majority of women in formal employment work in female dominated sectors: education (76%), followed by accommodation and food services (10%) and health and social work (6%) (GoI, 2019a). The share of women employed in the public sector is, however, significantly lower than national levels, representing only 3% of all India (Ibid.). In the Delta the gender gap in formal employment is even more accentuated than at state level: of about 1.7 million formally employed, only 8% are women. Generally, women have a lower share of participation across all sectors in the Delta, with the exception of the primary sector and some other minor sectors (mining and hospitality) where female employment participation is higher than 25% (GoI, 2019a).³⁰ The Economic Survey 2021-22 points out that nearly 50% of women in rural areas work as unpaid helpers in household enterprises (GoO, 2022).

In terms of employment by caste, data suggest that the share of marginal workers in both ST and SC is higher than their overall share in the total Delta population (Prati et al., 2022), suggesting a higher level of economic precarity.³¹ This is even more noticeable for SC women which account for 29% of marginal workers in the Delta, a significantly high percentage when compared to their share in the total Delta population (see Figure 10).

³⁰ The primary sector includes cultivators, agricultural labourers and other primary activities (e.g. livestock, fishing, hunting).

³¹ In the 2011 Census, workers are defined as 'main' and 'marginal'. 'Main workers' are those who have worked for most of the year (at least 183 days or six months) while 'marginal workers' are those who have worked less than 183 days or six months in a year.

Figure 11. Delta population and main workers by caste



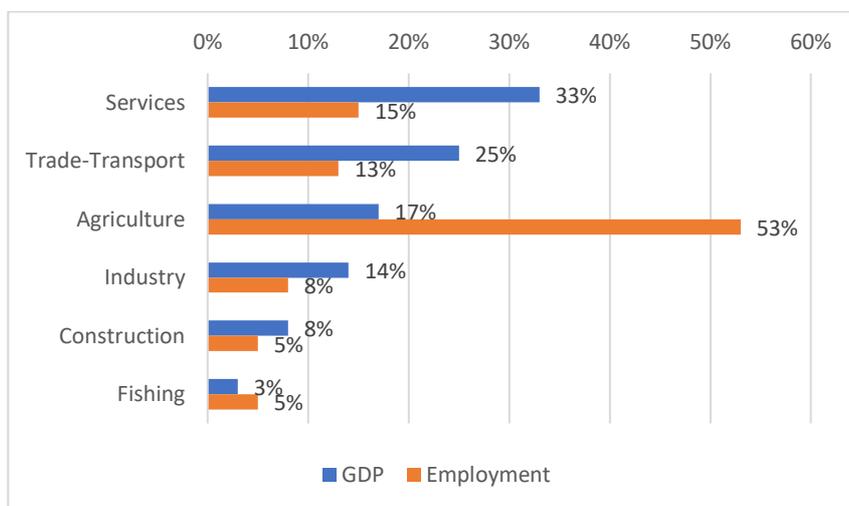
Source: Elaborated from Census, 2011, in Prati et al. 2022

In the district of Kendrapara, the gender and caste differences in main and marginal work are similar to those observed across the Delta. As we will see later in the findings chapters, this study highlights an even larger gender gap in workforce participation that may be explained by differences between rural and urban areas. In rural areas, women’s engagement with paid work (formal and informal) is overall significantly lower than in urban areas as also confirmed by employment statistics (GoO, 2022).

As mentioned earlier, agriculture remains the main employment and income sector, especially in rural Odisha. A comparison of the 2001 and 2011 Census data shows that over this last decade, the number of agricultural wage labourers has increased while the number of cultivators has been decreasing. The could be due to concurring factors such as population growth, rise in the cost of agricultural inputs, declining productivity etc. (Jeeva et al., 2019). Although the share of agriculture in the GSDP is declining, the number of people engaged in the sector remains high. According to the latest economic survey (2021-22) more than half of Odisha’s workforce is employed in agriculture-related sectors (GoO, 2022). In the Mahanadi Delta, the share of people employed in the primary sector is even higher than in other areas of Odisha, representing over 58% of the total workforce. Agriculture, therefore, constitutes the main source of income across the Delta (Figure 12). However, Odisha itself is one of the poorest performing states in terms of agricultural growth in India.

A predominance of subsistence agriculture and low agricultural productivity could explain the discrepancy between contribution to GSDP and employment (Arto et al., 2019).

Figure 12. Percentage distribution of GDP and employment by sector in the Mahanadi Delta (2011)



Source: Redrawn based on data from Arto et al. (2019:183)

Agriculture is the main sector of employment for women in Odisha when counting also informal and casual employment (GoO, 2022). In coastal districts female work participation in agriculture is, however, lower than the state average (13% vs. 22% respectively). Kendrapara is one of the districts with the lowest female participation rate in agriculture standing at 6% against 38% male participation rate (Census, 2011).

The rate of unemployment in rural Odisha is higher compared to all India, in particular among youth (15-29 age group) (NSS, 2014). It is interesting to note that unemployment and poverty seem to be inversely related. Districts with higher levels of poverty reveal lower rates of unemployment and vice versa (Panda, 2016). A possible explanation is that the vast majority of the rural poor are employed in sectors that pay very low wages, such as agriculture. A gender gap in real wages is observed in all districts with some variation across them. In the agriculture sector the gap in wages of female and male workers is even more accentuated than in other sectors and it has widened over time (Panda, 2016). The Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS), in place since 2006-07, has contributed to provide rural employment opportunities in rural areas at village/gram panchayat level. Since 2019 there has been an increase in the number of 'person-days' of jobs created and in women's participation, especially in 2020-21 during the Covid-19 pandemic. In terms of castes, SC and ST represent over half of the beneficiaries of the

scheme (GoO, 2022). The findings chapters will discuss the shortcomings of MGNREGS as an effective alternative to migration.

4.7 Conclusions

This chapter has provided an overview of the geophysical, demographic and socio-economic context of Odisha and the Mahanadi Delta, with further related data about the district of Kendrapara, which is where the study area is located. The chapter shows that Odisha has made progress on economic growth and poverty alleviation in recent years, although there is persistent inequality and uneven distribution. Large communities continue to be deprived of basic needs and some regions are worse off than others. Human development is modest due to slow progress in improving access and quality of health as well as nutrition deficiencies and food insecurity, especially among vulnerable population groups, such as women, children, SCs and STs.

Odisha remains an agrarian economy. Despite the modest contribution of the agri-food sector to the state's GSDP, the majority of the population lives in rural areas and is heavily depends on agriculture for income and food security. Agriculture is also the main employment sector in the state and is dominated by rainfed rice production and aquaculture, especially in coastal areas. Agriculture productivity is well below the all-India average due to environmental factors, land fragmentation, low mechanization and limited access to technologies (section 4.3).

Although Odisha has witnessed a significant economic growth in the last decades, socio-economic inequality remains high within and across districts. Coastal districts are found to be overall better off than southern and northern districts, which have also the largest SCs and STs populations. Coastal Odisha, in particular the Delta districts, are however more vulnerable to climate risks which affect many aspects of life and rural livelihoods. Gender and caste result as important determinants of vulnerability and marginalization. Women in Odisha have high levels of undernourishment and anaemia compared to men. Female work participation is significantly low, especially in the Delta, with Kendrapara showing the lowest rate of women in employment (both formal and informal). Gender inequality is also observed in landholdings which are largely owned by men. SCs and STs are found to be the most vulnerable and marginalised social groups experiencing the highest level of income

poverty, lowest level of education, low access to formal employment and low or no access to land. Socio-economic poverty is overall more pronounced in rural areas than in urban areas. Rural areas are also bearing the brunt of climate change impacts because of their exposure and high dependency on climate-sensitive rural livelihoods (e.g. rainfed agriculture) and natural resources.

This chapter helps frame the analytical discussion that follows (Chapters 5, 6 and 7) within the broader socio-economic and agrarian context of Odisha and the Delta. The next chapters will delve into an in-depth analysis of migration, gender and climate adaptation in three villages where the fieldwork was conducted (see Chapter 3).

CHAPTER 5. ENCOMPASSING GENDER: MULTIPLE DIMENSIONS OF POWER AND INEQUALITY

*Boys are like silver pots, girls are like soil pots.
You can use a silver pot many times and it stays clean
but once you have used a soil pot it remains stained
forever (Local proverb)*

5.1 Introduction

Barriers and opportunities to adaptive capacity, and the ability to act upon them, are intimately linked to norms and social roles, differing along the lines of gender, caste and class (Chapter 7). Similarly, migration is shaped by multiple forms of inequality and privilege embedded into social relations and intersecting identities which contribute to determine migration drivers, patterns and outcomes (Chapter 6). The analysis of adaptation and migration in this thesis confirms that both processes are gendered and that men and women are not undifferentiated groups. In fact, individuals' multiple identities act simultaneously, establishing people's power and vulnerability. The aim of this chapter is to understand *how* and *why* forms of privilege and oppression are generated and maintained in the study area, through an analysis of the power dynamics and social structures in which inequality and social divisions are rooted. Identifying the underlying factors shaping inequality, agency and empowerment is crucial in comprehending men's and women's different experience of migration and adaptation, as well as recognizing the mechanisms through which these processes can themselves challenge or reinforce power-laden social structures.

The "*ability to make strategic life choices*" (Kabeer 1999:436), one of the most accepted definitions of empowerment, is essential for women's capacity to harness opportunities and mitigate challenges stemming from both migration and adaptation. The concept of empowerment helps us to examine and understand how the intricate net of social norms and power structures, which may seem disconnected or only partially connected to processes such as migration and adaptation, act together and translate into a diversity of outcomes and individual experiences. Empowerment and disempowerment are twined. Being empowered entails moving away from a previous condition of disempowerment and vice versa (Kabeer, 2008; Mishra & Tripathi, 2011). The analysis of this chapter is conducted

using the overarching concept of empowerment, discussed in Chapter 2, to frame and make sense of the changing interplay of norms, behaviour and agency.

The focus of this chapter is on the individual and domestic domains where multiple hierarchies between men and women - and among women of different ages and social positions within the family - intersect. While the emphasis is on the micro-level (individual and household/family unit), the chapter also brings insights into community level social relations using data gathered through FGDs, especially from the power analysis exercise conducted with both men and women.

Gender and caste are the primary categories of analysis but other relevant features of identities that emerge as critical, such as age, kinship position and class, are also thoroughly considered to cross-examine differences within social groups. The analysis aims to move away from additive approaches which, as highlighted in Chapter 3, are unfit to explain multiple dimensions of inequality (Bastia, 2014; Crenshaw, 1991; Valentine, 2007).³² This chapter seeks therefore to explore both inter- and intra-categorical differences (between and within groups) through various lenses.

The chapter begins by discussing kinship systems, intra-household power hierarchy and positioning (section 5.2). It continues by investigating the underlying causes of power hierarchies and key processes of oppression and privilege rooted in social practices, roles and traditions (section 5.3). The final section explores the intersection of caste and gender, highlighting relevant interlinkages that emerged from the field (section 5.4). The discussion of this chapter informs the analysis of migration and adaptation (Chapters 6 and 7) by providing rich insights into gender and power relations in the study area which are pivotal to understand social differentiation within these processes.

5.2 Oppression and privilege: household structure and kinship system

The household is the primary space where gender and power relations are negotiated and decisions about resource distribution are made.³³ Families are spaces of both cooperation

³² Additive approaches would, for example, assume that a SC woman is more oppressed than a GC woman because she stands at the intersection of two categories of oppression (gender subordination and caste discrimination).

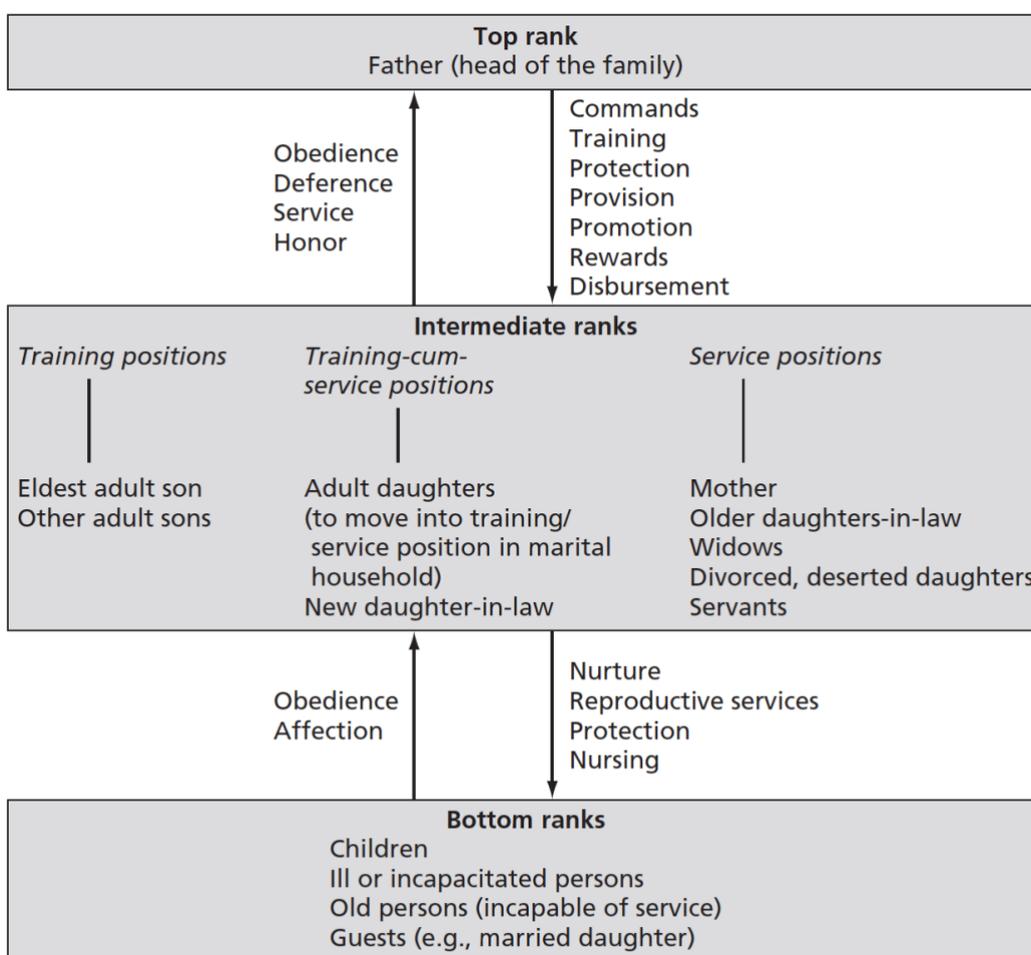
³³ The terms 'household' and 'family' are used interchangeably in this thesis. Although conceptually different - household is generally referred to co-residency while family to kinship - empirically there is not such a rigid distinction (see Bender 1967). Moreover, the concepts of households and families differ among and within societies. In the field location, families

and conflict, where the interests of some members may prevail over others (Agarwal, 1997). In patriarchal societies, gender is a key marker of intra-household inequality and women's weaker bargaining power. Yet, as it will be demonstrated in this chapter, there is a substantial heterogeneity in terms of power and autonomy between women, even within the same household. A closer look at the household structures in India and South Asia is necessary to understand how gender and other identities impinge on resource distribution and decision-making.

In the study area, the most typical family structure is that of the extended (or joint) household. According to patrilineality and patrilocal norms, upon marriage women leave their native family and join their husband who normally lives together with his parents and potentially unmarried siblings in extended households. Usually kinship-based and patrilineal extended families follow hierarchy based structures in which each member occupies a position that comes with certain rights, duties and expectations. The positioning within the household's hierarchy is strongly based on social norms and influenced by kinship and individual's identities – i.e. gender, age, caste. A woman's positioning for example depends on her identities, the positioning of her husband and her position with respect to other women in the household (Deshmukh-Ranadive, 2005; Guérin et al., 2013; Johnson & Johnson, 2001). Members are ranked following these normative rules of power and powerlessness. The positioning can mutate over time (i.e. with progression in life stages), if there are changes in the household composition or, for example for women, it can also change when the husband's position shifts upwards or downwards in the hierarchy. In fact, unlike nuclear families, extended households offer the possibility to move within the hierarchy.

usually occupy households and even when the husbands migrate for long periods and physically reside away they are considered as co-residents and members of the family.

Figure 13. Hierarchical positioning within an extended family



Source: (Deshmukh-Ranadive, 2005)

Figure 13 shows the typical hierarchical structure and illustrates each member's potential to move along the ranking scale. By mirroring the most common family structure in the study area, Figure 13 is useful to visualize and better understand the underlying factors of some of the observed patterns of power and oppression. Deshmukh-Ranadive (2005; 2006) describes the hierarchy structure as composed of three tiers where the father occupies the top rank as head of the household and most of the other members are positioned in intermediate ranks made of training, training-cum-service and service positions. Without going into too much detail, it is important to notice who falls in these sub-categories and why.

The training position is generally occupied by the eldest son who is promoted to the top rank if the father dies or falls sick. Eldest sons have the primary responsibility to provide for the household, especially when the parents grow older. In the context of migration, eldest sons are expected to remain close to their family while younger sons migrate (see Chapter 6). The

latter have very few possibilities to become heads unless they form their own nuclear family outside the extended household - still they rank above the other categories. Mothers, older daughters-in-law and widows fall within service positions but belong to different sub-categories of power and autonomy. For example a woman with a son would rank higher than a woman with only a daughter and a woman without children would rank lower than both. As it will be discussed later, the preference for sons and the crucial importance of women's reproductive 'success' are distinctive factors influencing patterns of oppression and privilege. Finally, young and new daughters-in-law occupy the training-cum-service category, which is the lowest category of the intermediate positions, together with daughters living in their native family. As will be discussed later in this chapter, young daughters in-law are exposed to stricter purdah practices including confinement in the household space and exclusion from women community groups.³⁴ At the very bottom, there are children, the ill and the elders. Deshmukh-Ranadive (2005) includes in this category also the daughters who may return to their natal family. However, it should be highlighted that due to customary social norms, native families usually do not allow a daughter to return home as it is considered shameful for the family (Fieldnotes 2016). An example of this is the case of Sasmita whose financial situation does not allow her and her husband to provide for their two children, while her native family seems to be better-off. When her husband, who had migrated in the past but returned at the time of the interview, was living in Delhi she asked her parents if she could stay with them. As Sasmita, 36-year-old, GC, explains below :

I have three brothers, they are all international migrants [...] my parents are well-off, they have agricultural land and they receive remittances from my brother. I asked if I could stay with them with my children but they didn't allow me to return [...] my father said that I am a married woman and that is unacceptable in our society to allow me back (Dakhinaveda_03).

Married women can visit their natal family only with permission from their in-laws and only if accompanied by a male member of the household or an older daughter in-law. Arya, 24-year-old, SC, reported : *"I can never go alone to visit my parents. I have to ask for permission*

³⁴ Purdah refers to the religious and social practice of female segregation within the household. Typically associated with covering the head and face with a veil or a sari [all the time, or specifically in public places/spaces, and in the presence of non-relative males in the house], purdah encompasses a much broader range of visible and invisible practices of women segregation. For instance, practices related to women's restricted mobility within and outside the household.

and someone needs to come with me” (Nuagan_18). In their natal family, women are considered ‘guests’ and have no say, hence their position at the bottom of the hierarchy in Figure 16.

The above discussion illustrates how the kinship system can influence one’s authority and power in the family. Most importantly, it confirms the existence of a women-hierarchy within the household structure shaped by factors that encompass kinship and include age, marital status and reproductive ‘success’. Finally, it shows that this power structure is never fixed and that individuals can acquire or lose power and authority depending on many factors. For example, women’s bargaining power increases as they move from being young daughters in-law to mothers in-law, or if they have a son (Allendorf, 2012; Deshmukh-Ranadive, 2005), and a husband’s position can change according to his economic contribution (Guérin et al., 2013). In nuclear families the patriarchal hierarchy is much simpler. The only adult woman in the household has more opportunities to become *de facto* head - for example when the man migrates or is incapacitated – and gain more autonomy than women in extended households (Allendorf, 2012; Dhanaraj & Mahambare, 2017). However, as will be demonstrated later in this chapter, increased power and autonomy do not necessarily – at least not always – equal empowerment. The following sections will provide a close-up on some of these covert mechanisms of power also within women-hierarchical structures.

5.2.1 Young daughters in-law: navigating mobility and striving for collective voice

Gender, age and kinship position are major factors influencing status and positioning in extended families. Young daughters-in-law are often placed at the bottom of the hierarchy and exposed to multiple forms of subordination (i.e. to the subordination of male and older female members of the household). In terms of division of labour, the youngest daughters-in-law are the main bearers of household chores. When I interviewed Vadhana, 28-year-old, GC, living in an extended family with her daughter, parents-in-law and older sister in-law, she explained that as the youngest daughter in-law she was the main carer and was responsible for all the household chores, especially cooking. When I asked if someone helped her, she said *“My sister in-law sometimes helps, sometimes doesn’t”* (Dakhinaveda_16). The hierarchical division of labour between women in the household emerged as a common trait in several interviews. It can be enforced with more or less rigidity, but as a socially accepted norm, the largest burden of household chores stays with

youngest daughters-in-law. Gendered division of labour is traditionally discussed through binary lenses. Analysing differences between men and women is important to identify typical gender disparities more directly related to patriarchal structures, however it is also critical to gain a deeper understanding of intra-feminine division of labour within extended households in order to expose less visible forms of power and oppression, such as those here illustrated.

Limited mobility is another aspect that was often reported. In the words of Zaei, 28-year-old, GC, who lives with her mother- and sister in-law: *“I am the youngest daughter in-law, I am not allowed to leave the house. As a daughter in-law I can’t even stand on our doorstep, I have to stay inside the house”* (Khaita_06). As will be discussed later in this chapter, restrictions to mobility are typical traits of patriarchal systems, particularly accentuated in India due to caste-gender intersections. While this confinement usually pertains to the village boundaries, youngest daughters-in-law are sometimes not even allowed to leave the house.

Linked to mobility restrictions, a further issue that emerged is the scarce participation of young women in community groups, even women Self Help Groups (SHGs). When technically part of SHGs, younger daughters in-law do not actively participate in group meetings because of their subordinate position in the household. As put by Soumya, 29 year-old, GC: *“I am a member of a SHGs but I never participate in meetings because I am the youngest daughter in-law in my family”*. She later explained that her mother in-law was going to the meetings on her behalf (Khaita_12).

Studies undertaken in India and Bangladesh show a positive association between participation in savings groups and women’s empowerment linked to collective agency and increased sense of self-worth (Agarwal, 1997; Hashemi & Schuler, 1996; Kabeer, 2001; Koenig et al., 2003). Some women I interviewed reported that their membership in savings groups had increased their confidence. Munia, 27-year-old, GC explained why being part of a SHG has been important for her:

Being a member of the SHG gave me more confidence [...] now I attend meetings outside the village and I go to the bank by myself. If my family needs financial help I can get a loan from the group (Khaita_08).

In a FGD, one participant hinted that membership to SHGs can increase women's bargaining power in the household. As she reported: *"We are part of SHGs, we are empowered now and we can talk with our husbands"* (FGD02-K-W).

Membership to SHGs may increase women's mobility and women's access to public spaces (i.e. the bank) in ways that can be seen as more 'socially acceptable', especially since they contribute to make ends meet by providing the family with access to low interest loans. Kabeer (2001) argues that women's enhanced economic value through membership to SHGs, can help reduce conflicts between husband and wife since it releases men's pressure to fully provide for the family. SHGs meetings represent opportunities for women to share experiences, as also confirmed by women's reports that during meetings they support each other and 'share their problems and feelings' (Fieldnotes 2016). Similarly to Kabeer (2001), Hashemi and Schuler (1996) observed an inverse relationship between women's participation in SHGs and incidence of domestic violence. They argue that when husbands and in-laws realise that women may share their experiences of domestic abuse in group meetings, they gradually stop practising it. Despite these positive examples, it is worth noticing that in highly conservative societies, women's groups may be perceived as threats to masculinity and could fuel domestic violence to resist changes in social norms (Koenig et al., 2003).

No explicit evidence emerged from the fieldwork of either a negative or positive relationship between domestic violence and women's participation in community groups. As will be explained in greater depth later in this chapter, interviewed women were rarely open to discuss their experience of domestic abuse. This is to say that a possible relationship cannot be excluded. It emerged from the FGDs that women, of all ages, have to ask men's permission to participate in any community activity, including community group meetings. As put by a male participant: *"If my wife doesn't ask my permission to participate to any community group, she can go back to her parents' house"* (FGD05-N-M). It could be suggested that, when women's participation in community groups defies gender norms, it may lead to tension.

From the women's standpoint, participation in SHGs is considered a positive experience that increases their sense of self-worthiness and their confidence - an experience from which young women, especially young daughters-in-law, are excluded by social norms.

Participation in community groups contributes to strengthen individual agency and, by being a space where women share their experiences of oppression, could enhance solidarity; becoming a means to challenge the status quo through the exercise of 'collective agency' (Agarwal, 1992; Hashemi & Schuler, 1996; Koenig et al., 2003).

5.2.2 Mother in-law-daughter-in-law relationships

At a later life stage in patrilocal households, mothers of sons will have the opportunity to become mothers-in-law and exercise authority towards their daughters in-laws. It is therefore through their sons that women acquire power, reaching the top rank of the women-household hierarchy and becoming, in a way, 'part of the patriarchy' (Ahmed-Ghosh 2004:109). Mothers-in-law may replicate the same forms of oppression that they suffered when they were young brides. The crucial role of mothers-in-law in managing the womenfolk in the household, and in doing so preserving gender norms through control over daughters-in-law's mobility and behaviour, has emerged vividly from the fieldwork. Even when fathers-in-law are still heads, it is the mother in-law who *de facto* exercises control over daughters-in-law's mobility and behaviour (Fieldnotes 2016). Women's internalization of norms can lead to a reinforcement of gender oppressive structures within the same women-hierarchy. During a FGD in which young women were debating gender equality, some elder participants reinstated the importance of respecting patriarchal traditions. A woman said: "Now daughters in-law want to wear salwar kurti instead of sari.³⁵ It is not good because it spoils the tradition" (FGD02-K-W). A sari is a form of veiling in the Hindu tradition that married women are expected to wear. In urban areas women have more freedom to choose the way they dress, however similar pressures from mother in-laws to conform to traditional norms still persist. For example, my interpreter who lives in Bhubaneswar in an extended family said: "My mother in-law controls the way I dress. I used to wear jeans. I like it a lot but after I got married my mother in-law said that I never had to do it again. I liked my clothes" (Fieldnotes 2016). Clothing is only one of the many aspects of control over one's body, but gives an indication of the role that mothers in-law play in safeguarding traditional patriarchal norms.

In the study villages, women living in extended families seem to perceive the authority of their mother in-law as more rigid than that of their husbands, with whom they report to have more negotiating power. In the words Eashita, 32-year-old, GC: "There are certain

³⁵ Salwar kurti are less traditional dresses made of trousers and a long shirt. In conservative rural areas it is unacceptable for a married woman to wear a Kurti.

things that you can discuss with your husband but not with your mother-in-law. If I want to buy something for myself I don't feel comfortable asking her" (Khaita_01). Mothers-in-law are often the financial guardians of the household, in most cases they are the recipients or managers of migrants' remittances and they hold control of day-to-day financial decisions. Some respondents reported examples of mother-in-law control over daughters-in-law's access to paid work. As reported by Raadhi, 50 year-old, GC:

My eldest daughter was working as teacher but her mother in-law did not allow her to continue to work. After she got married she left it. That is why I do not allow my other daughter to work. When she gets married her mother in-law will decide what she can or cannot do (Dakhinaveda_21).

From the perspective of a daughter in-law, Sania, 34-year-old, GC who left her job after getting married said: *"She [mother in-law] forced me to give up my government job after the birth of my child. It was a very good job but she decided that I didn't have to work [becomes emotional]. What could I do?"* (Khaita_21). Others hinted that mothers-in-law have a say over their daughters-in-law's sexuality. A young woman I was speaking to in the field reported that she wanted to have another child but her mother in-law was against it, and told her that a son was enough. Her husband, she said, was not going to oppose his mother's decisions. By customary norms in fact sons, even eldest sons, do not argue with their mother's decisions (Fieldnotes 2016).

In discussing mothers-in-law complicity with violence against daughters-in-law, Johnson and Johnson (2001) point out that women against women oppression needs to be understood in the context of the patriarchal structure in which they live. That is to say, mothers-in-law are victims themselves of the oppressive men-dominated society to which they conform, sometimes becoming perpetrators. Stories from the field about daughter in-law/mother in-law relationships are, however, not always grim. Sometimes women experience affectionate and positive relationships (Allendorf, 2017). Some women reported that they felt supported by their mother in-law and were free to ask them anything. However, understanding to what extent their relationship was truly supportive and positive is difficult, in part due to the inherent private nature of interpersonal relationships, but mostly due to the often very close physical presence of mothers-in-law during interviews. Despite the fact that they were usually kindly asked to allow us some privacy, they never really left the house premises and

often came back to listen to the interview. It is thus possible that some respondents lied or exaggerated about the quality of their relationships. The following sub-section will delve into the root causes and supporting factors of patriarchal structures, unpacking also some of the factors that explain the mutable positioning of women through their lives.

5.3 Women's agency through the stages of life: interwoven and reinforcing norms of patriarchy

The patriarchal system is woven through every aspect of Indian society. Mullatti (1995) offers interesting insights into the way that norms of patriarchy and male supremacy are deeply rooted in the Hindu religion, and how the latter has a pervasive influence on people's lives. During time spent in the field living with an Indian family of three young daughters (Chapter 3), I had the opportunity to observe their daily life and rituals of *puja*.³⁶ In the month of October the Kumar Purnima festival was celebrated, a festivity primarily worshipped by young women who pray and fast the whole day to the god Kumar to find them a good husband.³⁷ The girls in my household observed the fasting to the point that one of them almost fainted but fiercely refused to eat or drink, concerned that it could affect her chances of getting married (Fieldnotes 2016). In his discussion on Brahmanical patriarchy and Hinduism, Chakravarti (1995) points out that, according to these systems, it is only through marriage that women can find their social identity and free themselves from the 'sin' of being born women:

A woman is recognized as a person when is incorporated into her husband, only then does she become a social identity and in that state she is auspicious [...] through marriage and wifely devotion the 'biological' woman, a wild untamed and disorderly identity, can be converted into the 'cultured' woman – a social identity who has vanquished all the demoniac force within her. Only thus can women overcome the inauspicious marks of female birth and acquire the necessary karma to be reborn as men [...] (Chakravarti 1995: 2250).

Patriarchal norms cannot be entirely attributed to Hinduism but are certainly reinforced by some Hindu beliefs and practices that are nowadays so entrenched in the complex texture

³⁶ *Puja* is a Sanskrit term used in Hinduism to refer to worship and showing reverence to a god. It refers to daily prayers and rituals at home as well as ceremonial worship in temples.

³⁷ The Kumar Purnima festival occurs on the full moon day of the Hindu lunar month of Ashvini, usually between September and October, and marks the end of the monsoon season.

of Indian society to have become part of its cultural tradition even beyond religious faith (Gupta, 2003; Mullatti, 1995). From childhood women are defined in relation to men; first in their natal family and later through marriage. Changes in the household and relationship with men shape their social status throughout the life cycle. The following paragraphs attempt to provide insights into some of these dynamics, which influence women's vulnerability and voice in domestic and public arenas.

5.3.1 The social institution of dowry

Marriage is certainly of central importance to both men and women in India. It is considered a social obligation to continue patrilineality and it consecrates the union between two families (Chowdhry, 2005; Johnson & Johnson, 2001; Sharma et al., 2013). For women, it is a social necessity as marriage and motherhood allow to acquire 'societal value'. The majority of marriages in the study area are arranged by the respective families with no say from the bride and groom, who often see each other for the first time on the day of the wedding (Fieldnotes 2016). The marriage of daughters passes through the custom of dowry which is one of the factors feeding the son preference system. According to local customary norms, the bride's family has to pay a dowry to the groom's family. A son is therefore seen as a source of dowry while a daughter as a financial burden. Despite having been outlawed in 1961, dowry is still largely practiced in most parts of India, reinforcing gender inequality and generating competition over the acquisition of social status (Ahmed-Ghosh, 2004; Gupta, 2003).³⁸ The type of goods gifted through dowry has changed under the influence of consumerism and widespread use of social media, which have contributed to shape expectations and demands (Dalmia & Lawrence, 2005). During conversations with villagers it was mentioned that nowadays money and goods, such as jewellery, are no longer considered good enough. The groom's families now expect expensive electric items such as TVs and scooters. Receiving a large dowry is also often an opportunity to display wealth and power in the community (Gupta, 2003). Dowry can be an enormous financial burden for poor households and lead to debt accumulation, with significant implications for migration (see Chapter 6). The dowry is usually proportionate to the groom's status (i.e. education, job, class) - the tendency is to marry daughters into a family of higher status, especially if they are educated. Some women reported supporting their daughters' education so that they could marry them to "better men", meaning higher class families (Fieldnotes 2016).

³⁸ The Dowry Prohibition Act promulgated in 1961 and further amended in 1984 and 1986, defines dowry as any property or value given or agreed, directly or indirectly, by parents of either party to the marriage (Gupta 2003)

The flip side is that households who cannot afford to pay large dowries are further discouraged from keeping their daughters in school. One woman reported that the more educated her daughter was going to be, the higher the dowry her family had to pay, as society would expect her to marry someone with higher status (Fieldnotes 2016). This, together with the fact that by customary norms women leave their natal household, influences attitudes toward girls' education as generally not being a good investment for the family.

Unmet expectations about dowry could expose women to violence and harassment in the marital household. Although this study shows no evidence of dowry related violence, it is worth acknowledging that this is a widespread and well documented phenomenon in India (see for example Ahmed-Ghosh, 2004; Dalmia & Lawrence, 2005; Deshmukh-Ranadive, 2006; Gupta, 2003; Johnson & Johnson, 2001). The dowry contributes to define a woman's worth in the new household. When the dowry is considered inadequate, newly married women may be exposed to harassment and abuse in the marital home until additional payments are made by their natal families (Ahmed-Ghosh, 2004). The system of dowry explains the social and financial pressure to which poor households are exposed and that forces them to contract large debts, especially when having more than one daughter. Migration is often the only way to repay these debts. By indirectly influencing women's education and reinforcing women's subordination and devaluation, the practice of dowry is one of the root causes of gender inequality.

5.3.2 "Our husband is our master": domestic violence and internalization of norms

Domestic violence can be both a constraining and resulting factor of women's agency. Violence against women is a distinct symptom of unequal gender power relations and a critical barrier to women's social and economic development. Increased agency could be either a deterrent to or a trigger of domestic violence. The linkages between domestic violence and agency are indeed controversial and deeply context specific (Koenig et al., 2003). Women's greater autonomy could threaten power structures and norms of masculinity, generating conflicts and fuelling physical and psychological abuse (Allendorf, 2012; Deshmukh-Ranadive, 2006; Koenig et al., 2003). The controlling aspect of marital power is destabilised when women do not passively comply to their social roles and overstep expected boundaries. In focus group discussions with men and women, marital violence was often attributed to women's failure to fulfil their tasks, and thus to meet men's expectations

of dutiful wives. Violence against women has emerged in all the study villages, often related to compliance with household chores. During a focus group with men, one said: *“In this part of India we beat women if, for example, dinner is not ready”* (FGD01-K-M). In another FGD one reported: *“If lunch is not ready, we get very angry. Some of us slap them [wives] and shout: what did you do until now? Why lunch is still not ready?”* (FGD03-D-M). Violence can also be associated with control over women’s bodies and sexuality. In a women FGD, a respondent said: *“Some of us are forced to give a massage to our husbands in the evening. Sometimes our husbands force themselves on us. We cannot refuse to have sex. If we do refuse, they [husbands] beat us”* (FGD02-K-W).

Deeply embedded in the patriarchal structure, domestic violence is socially accepted and institutionalized. As a male respondent put it: *“Wife beating is a cultural practice needed to submit your wife. If she [the wife] doesn’t obey, she can go back to her parents. Because it is a practice we should all follow it”* (FGD05-N-M). While admitting to exercising violence over their wives, some men recognize the existence of gender inequality. Yet, conforming to norms of masculinity is essential for social respect. A focus group participant in Khaita explains as follows the influence that patriarchal norms have on maintaining violent behaviour:

Sometimes I think it is not right but I still beat my wife [...] this is a ‘men’ society. If I don’t beat her other men will laugh at me and I won’t be respected in the community. For example, I have been in this meeting and I’m hungry. If I go home now and lunch is not ready I will have to shout at my wife, maybe I’ll also beat her. We [men] do that. We are expected to do that (FGD02-K-M)

The above quote highlights that men who do not abide to norms of masculinity can lose the respect of others and be treated as inferior (Anandhi et al., 2002). In caste-based systems, the need to assert power through deployment of violence is further complicated by caste-related power dynamics. For example, upper caste men may use violence against their women to reassert power over lower caste men in the public domain, as observed in Anandhi et al.’s (2002) study in Tamil Nadu. Inter-caste differences in the use of violence do not emerge from this study, however it should be mentioned that women were reluctant to discuss violence in interviews, which made it difficult to disaggregate information. Also in cases where I knew that husbands were using violence against their wives - because they

shared it in focus groups, or neighbours reported - wives denied any household conflict. It is indeed common that women, especially from upper castes, do not share their experiences of domestic violence to preserve caste and family honour (Ibid.).

The underreporting of domestic violence could be also linked to the internalization of oppressive gender norms. Women are raised according to patriarchal ideologies in which oppressive behaviour, such as violence and abuse, could be internalized as acceptable and justifiable, as the following excerpt from a focus group discussion with women suggests:

Our husbands just say: Stand there, I want to beat you! In this area is normal. Our husbands are our masters, they can do whatever they want to us [...] they can beat us for many reasons. If dinner is not ready or if we ask them to buy something for us, such as a sari or make up (FGD04-K-F)

Mishra and Tripathi (2011) argue that when women justify domestic violence they demonstrate the ways that notions of freedom and choice are heavily influenced by the socio-cultural context in which the concept of agency is also shaped. Conforming to gender norms does not inherently signify passive acceptance, in fact it could itself be an act of agency and choice. Some women reported that resistance to oppression and disobedience would bring 'tension' and 'conflicts' in the household, whereas their role is to 'maintain unity and peace'. Such behaviour suggests that women have chosen themselves to comply with gender inequality to the benefit of their family but at the expense of their own well-being. Despite being de facto a choice, it is a choice that results from – and reinforces – women's internalization of their subordinate status. Naila Kabeer (1999:441) points out that "*power relations are expressed not only through the exercise of choice, but also through the kinds of choices people make*" reminding us that dominance can also operate through consent, not necessarily through coercion. Similarly, agency is not a synonym for resistance and can also manifest in less intuitive ways, such as through acceptance. Women's internalization of their lesser social status challenges assumptions about the power-choice-agency equation and demonstrates the need to contextualise these notions. What women do and consider of priority is inevitably influenced by their reproductive and social roles, such as maintaining family unity (Rao, 2015). The next sub-section will delve more closely into the gender division of labour and the significance of women's and men's social roles.

5.3.3 Productive and reproductive roles

Productive and reproductive roles are critical in shaping women's bargaining power and position in the household.³⁹ Gendered division of labour is not biologically ascribed but socially determined thus based on cultural beliefs about what men and women should do (Beneria, 1979). As such it is deeply entrenched in patriarchal power structures and, even if mostly visible in the household, it is justified at multiple institutional levels (community, local, national: Derne, 1994; Chafetz, 1991). In fact, a behaviour that deviates from these structures, such as a woman engaging in paid work activities, is penalised at household but also at community level through public shaming and repercussions for the woman's family and caste. In line with typical patriarchal settings, in the research area women's work is restricted to the domestic sphere while men engage in income generating activities outside the household. A division that reinforces patterns of economic dependency and subordination and maintains inequality.

In the study sites there are no notable differences among castes, unlike some studies which show that SC women are more likely to work outside the household compared to upper caste women for whom it is severely prohibited, being considered a sign of low status (Anandhi et al., 2002; Rao, 2014a). Aside from a few exceptions of women working as Asha (Accredited Social Health Activist) or cooks in the community schools, in the research villages there is a clear cut gender division of labour, mainly aligned with patriarchal principles, that see men being the breadwinners and women fulfilling care and reproductive roles in the domestic sphere. Women's lack of participation in productive activities is a consequence of rigid patriarchal norms but also a means to maintain inequality (Folbre, 1994). As put by a focus group participant: *"In rural areas we say that the man is the right hand while the woman is the left hand. Women depend on us. We earn money, they have to take care of the family"* (FGD03-D-M). Women's roles are indeed defined through their subordination and dependency to men, which determine their position and bargaining power in the household. Economic independence was mentioned consistently by women either in interviews or focus group discussions as a critical enabling factor to have voice and be heard in the household. As highlighted in the following excerpt from a focus group discussion with women:

³⁹ In this study 'reproduction' is intended in its broader feminist notion of social reproduction which encompasses the definition of biologically defined reproductive functions (Beneria, 1979). Similarly 'unpaid work' refers here not only to family care activities - such as cooking, cleaning or child care- but also to those categories of unpaid work that include growing food for self-consumption (kitchen gardens), collecting fuel and water (Folbre, 2006)

Men do only one work, we have to take care of all the household activities and they still ask us “what do you do?”. We need to work to be economically independent. Maybe there will be conflicts but I want to work. If we work we have more voice in the decisions (FGD10-K-W)

The above quote discloses three underlying factors related to women’s desire to take up paid work. The first aspect is linked to their sense of self-worth as they can contribute to the family needs. In the words of Sudeshna, 48-year-old, GC: *“It is very important for a woman to work because it means to contribute to the family income. She can send her children to school”* (Dakhinaveda_04). For many interviewed women the highest motivation in taking up work is being able to help the family. The second aspect is related to autonomy and economic independence. Sunita, a 30-year-old, GC, lives in an extended family with her in-laws while her husband is in Puni. She said: *“If you work you are economically independent and if you are economically independent you don’t have to ask your husband or your in-laws for money every time you want to buy something for yourself”* (Dakhinaveda_02). The third aspect is that of voice and visibility. By earning money women are seen by others as having ‘value’ in the family and they can use this recognition to gain more voice in decision-making and control over their body (Rao, 2014a).

The issue of invisibility of care and unpaid work versus paid work is extensively discussed in feminist literature (Folbre, 2001; Folbre & Nelson, 2000; Nelson & England, 2002) and constitutes one of the main factors maintaining patterns of gender oppression and women’s subordination. In the study villages, women are secluded from any income generating activity. Most of them reported not being allowed to work by their husbands or in-laws, even if work was available in the village. Resistance to changes in the status quo and division of labour was manifestly explained as follows by one participant of a men’s FGD: *“If we [husband and wife] both earn money and I am not happy about something my wife could tell me: who are you? I earn money too. And I lose my respect and power in the household”* (FGD01-K-M). Similarly, in another men’s FGD one reported the following: *“If women became economically independent they would interfere in the decision-making. They would have too much voice in the household”* (FGD03-D-M). It is indeed clear that the division of labour is instrumental in women’s subordination to men. Contrary to studies arguing that people reproduce and abide by power structures subconsciously (Chafetz, 1990), in the study area men demonstrated full awareness of the ways gender inequality is maintained

and were determined to defend their privileges. Derne (1994) also observed that Hindu men consciously perpetuate gender unequal social structures knowing that restricting women's empowerment opportunities is crucial to maintain their privileges.

The story of Taalika is an example of how women's engagement with paid work could shape intra-household power structures and challenge men's dominance. Taalika, 42-year-old, OBC, lives in Dakhinaveda with her husband and two children. Her husband is often sick, he does sharecropping for family consumption but cannot work as a wage labourer because of his health condition. Six years before our interview Taalika started to work as village Asha. The family did not have any source of income and their daughter fell ill with breast cancer, needing expensive medical care. Given the situation Taalika's husband did not oppose her decision to train as Asha. She is earning Rs. 500-600 per month, which helps to cover some of her daughter's treatments. She reported that after becoming Asha she her confidence grew:

I explore more things now. I go to Rajnagar, to Kendrapara, to Cuttack. I take trainings [...] I am more confident and more independent. Before becoming Asha I never left the village. My husband was going to the market. Now, I go everywhere (Dakhinaveda_18)

When I asked Taalika who makes the decisions in the household she said that she consults her husband but she takes the final decision. For example, her husband wanted to sell their cow but she disagreed, explaining that if they sold it they would not be able to afford milk and they also needed the cow dung for fuel and maintenance of house walls. She reported:

I told him [husband] that he does not realize how important the cow is. We cannot even afford vegetables and we eat only rice for prolonged periods, we need the milk. We will not sell the cow. I decide. I am the one earning money (Dakhinaveda_18)

Despite being visibly worried for her daughter's health, and tormented over being unable to save for her dowry due to financial constraints, Taalika looked like a very confident and independent woman. She admitted that because she was earning for the family, she felt she could speak without her husband confronting her.

Besides being closely related to voice and decision-making, the gendered division of labour has consequences for women's burden and time availability. National statistics largely fail to capture unpaid work, invisibilizing women's contribution to the care economy and the gendered distribution of tasks (Folbre, 2006; Hirway & Jose, 2011). A Time Use Survey (TUS) was piloted in India in 1998-99 (Gol, 2000) to gain a general understanding of the time spent by men and women in paid and unpaid activities.⁴⁰ A gender disaggregated analysis of the TUS data suggests that female work in Odisha is mostly done at home and is prevalently unpaid (see also Prati et al. 2022). Men spend 93% of their time on paid work (excluding leisure time), while the time spent by women on paid activities is only 11% showing a disproportionate workload distribution and a notable gendered division of labour. This was confirmed by qualitative data collected during the fieldwork.



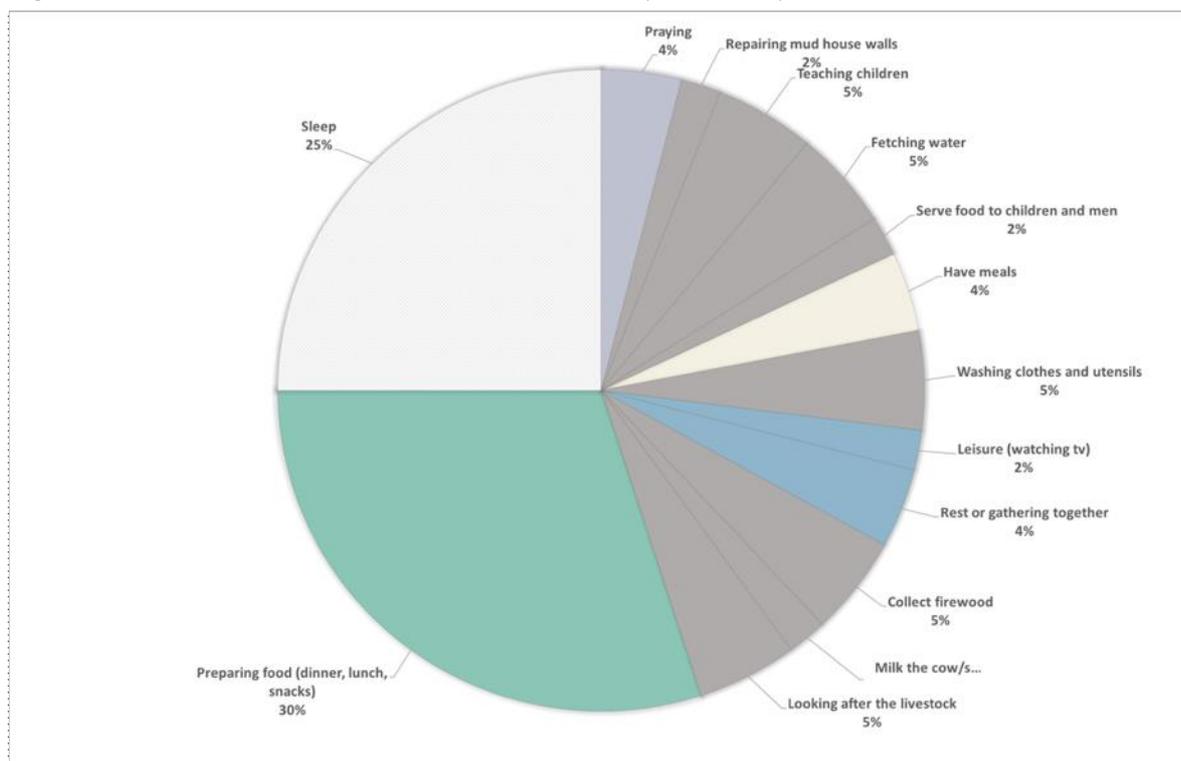
Picture 2. Woman cooking on a typical fire-wood burning cookstove

To gain a more accurate and context-specific insight into workload distribution and time use, the 'Daily clock' PRA exercise (see Chapter 3) was conducted in the study villages with groups of men and women. During this exercise the participants were asked to list their daily

⁴⁰ Time Use Surveys capture time spent in the System of National Account (SNA) activities (formal employment activities) as well as the time spent in the so-called Extended SNA activities (unpaid and care work) and in Non-SNA activities (leisure time).

activities within a typical 24 hour day and indicate how much time they were spending on each. Unsurprisingly, women were found to spend most of their time in care- and reproductive-related work especially food preparation. They are also primarily responsible for livestock grazing and maintenance which fall within the ‘extended’ definition of unpaid work, being livestock predominantly owned for self-consumption.

Figure 14. Women’s time use in Khaita as stated in the daily lock activity

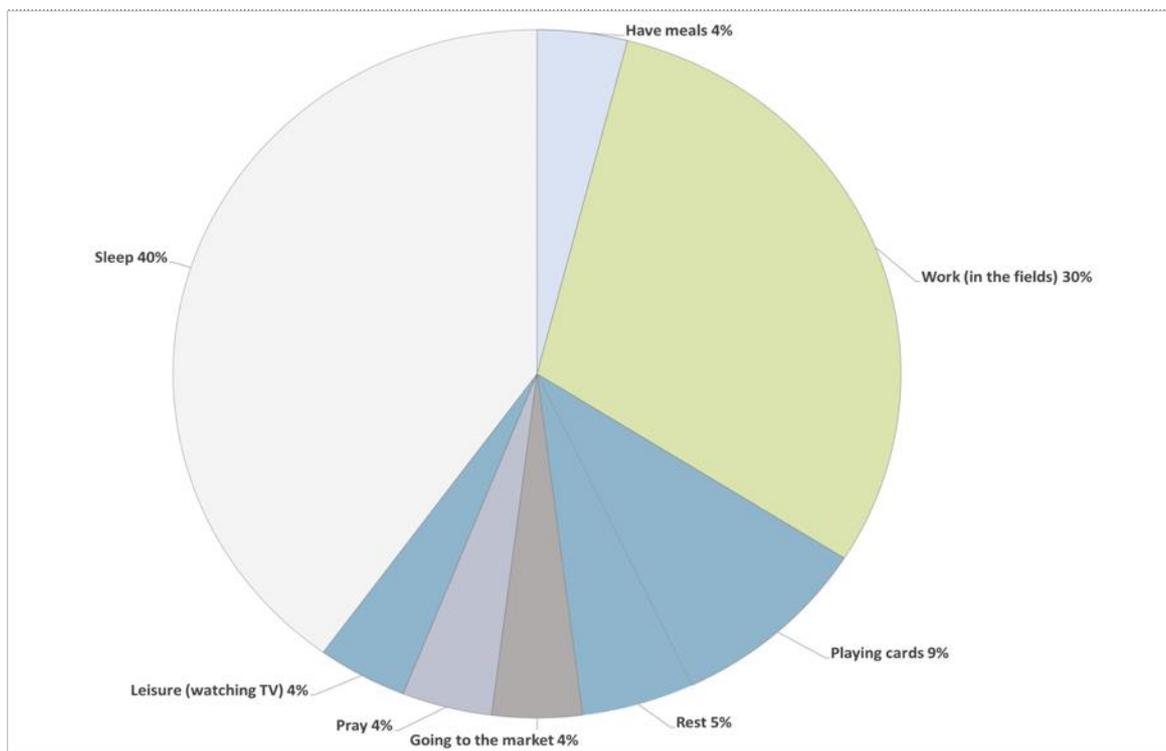


Source: Author’s elaboration from daily clock activity with women in Khaita (FGD29-K-W)

It is worth noticing that Figure 14 shows a non-exhaustive list of women’s activities based on a typical day at the time of data collection. In fact, there could be seasonal shifts in time use. Similarly, task allocation varies among women depending on kinship, age and household composition as earlier discussed. For instance, in extended families the chores are shared by the women in the household, whereas in nuclear households the whole burden is on the wife (and daughters). It was also noted before that, in extended families, there is a hierarchy of work duties between female members which often requires young daughters in-law to be primarily responsible of the household chores, especially cooking. Because of the time of data collection, which corresponded to the pre-harvest agricultural lean periods, Figure 17 does not show the time women spend helping men in processing and storing rice during the post-harvest season (December-January), which is additional to the described daily

activities. Seasonal shifts in time use can also occur during the monsoon season when some women cultivate vegetable gardens in the house back yard. The same exercise conducted with male groups (Figure 15) shows that men’s tasks are generally confined to wage and/or agricultural work, thus paid work, leisure and grocery shopping, which is traditionally a male activity since women are not allowed to leave the village unaccompanied.

Figure 15. Men’s time use in Khaita as stated in the daily clock activity



Source: Author’s elaboration from daily clock activity with men in Khaita (FGD28-K-M)

When it comes to rest, men spend twice the amount on sleep than women do. However, because men produce an income, the perception is that they work more than women. As a woman focus group participant said: *“We have to carry out all the household activities and to look after the family. Still they [husbands] tell us: you don’t do anything, you don’t earn money”* (FGD30-K-W). The time dedicated to unpaid activities is considered of less value despite being essential to family well-being. The unequal allocation of time could constrain women’s ability to develop their own capabilities (Folbre, 2006; Gammage, 2010). The issue of time poverty is embedded in inequality. Interviewed women living in nuclear households often reported lack of time as one of the main issues preventing them from taking part in SHGs meetings, which as discussed before, play a critical role in enhancing confidence and

boosting empowerment. In addition, time poverty could affect well-being and have physical and psychological impacts. Limited resting time can have serious effects on health, especially when women's working hours increase, for example in the post-harvesting and monsoon seasons, or when due to water logging and decreasing land, they have to walk longer distances to graze livestock - as was reported in inland villages (Dakhinaveda and Nuagan) affected by riverbank erosion. Finally, time scarcity hinders women's participation in productive activities even if patriarchal norms were more flexible. Many interviewed women reported being willing to work but having no time. Under conditions of time poverty and overburden, women do not engage in paid work, independently of constraining or enabling normative structures.

5.3.4 May you be the mother of a hundred sons: reproductive roles and maintenance of patriarchy

Like marriage, reproductive success is a pivotal aspect of agency in patriarchal systems. Procreation is a crucial responsibility attracting significant social pressure and determining women's position in the household and community (Rao, 2014a). In the study sites, women are expected to procreate, preferably producing sons, to gain recognition as good wives and mothers. Being childless leads to social marginalization and fuels domestic violence. Any infertility is socially attributed to women but since procreation is also a sign of masculinity, failure to procreate can lead to domestic violence (Fieldnotes 2016). Sheela, 40-year-old, OBC, lives with her husband after separating from their joint household. Her story of infertility and domestic abuse is illustrative of how fragile and vulnerable childless women can be in a society where being a mother defines a woman and gives her social status. Sheela talked to me through her struggle with infertility and discrimination, especially when she was living with her in-laws who did not want to pay for her treatments, and about her abusive and controlling husband who was sitting a few meters from us. She said:

There is a lot of tension. My husband doesn't want me to take more treatments, he said that he already spent too much on me. He says that I am worthless because I can't give him a child [...] that I am an embarrassment. He never listens to my needs, he has never bought a single piece of cloth in my life. My mother buys me saris [...] he doesn't buy me anything [...] I want a child [she cries] (Khaita _19)

When I asked Sheela whether her husband used violence towards her she burst into tears repeating that she wanted a child. She became too visibly distressed to continue the interview and so we stopped. As noticed before domestic violence is rooted in complex patriarchal power structures, so even in this case it cannot be attributed uniquely to childlessness. Still, from Sheela's narrative it powerfully emerges how in the study area, as in many parts of India, reproductive success is a defining factor of women's agency both intrinsic agency (self-worth) and instrumental (power to). As also shown in other studies, childlessness influences decision-making power in the household (Rao, 2014a) thus hierarchical positioning (Deshmukh-Ranadive, 2006) .

Women are not only expected to procreate but to procreate sons. In the study area, the birth of a daughter is usually unwished. Under the influence of patriarchal norms and beliefs, having a boy is considered a blessing as opposed to having a girl. 'May you be the mother of a hundred sons' is one of the most famous Hindu wedding blessings. Because of the patrilocal institution (i.e. dowry and abandonment of the natal family), girls are seen as an economic burden for the family whereas sons are resources, as they will take care of their parents' future. The preference for sons is a common trait of many patriarchal societies, yet in the context of India it is also intimately linked to Hindu traditions. Some religious rituals may in fact reinforce the belief that a daughter is worth less than a son. A woman I was talking to while waiting for participants to arrive at one of the focus groups, mentioned a Hindu holy day called Putrada Ekadashi, celebrated around December-January, where couples fast and worship the god Vishnu to give them a son. She was newly married and reported that she wanted to observe the ritual in the hope she could have a boy (Fieldnotes 2016). Ensuring patrilineality is a woman's social responsibility. The birth of a son can immediately advance a woman's position in the household, as she fulfils her social duty of male-lineage transmission (Ahmed-Ghosh, 2004; Chakravarti, 1995; Deshmukh-Ranadive, 2005; Rao, 2014a). Chakravarti (1995:2249) highlights that some old Brahmanical texts refer to women as "*created for the sole purpose of procreating sons*" and that husbands are allowed to remarry in the case that they cannot have sons from their first wives. For women, having a son creates the potential to become a mother in-law and a chance to move upward in the household women-hierarchy.

The most extreme act of compliance with the son preference system is the traditional practice of female infanticide, which has led to a declining sex ration in modern India

(Mathur, 2008). The issue of female infanticide was beyond the scope of this study thus data were not purposely collected. However, in more than one instance, locals mentioned female infanticide as a phenomenon that is still happening. For example, one day in the field, a man stopped by to ask what we were doing. After the interpreter broadly explained to him the subject of the research, making reference to gender, he said: *“Here people still kill their daughters [...] if a baby girl is born some people would throw her in the river”* (Fieldnotes 2016). I have no evidence of the truthfulness of his or other people’s allegations of female infanticide in the study area. The above quote provides only a glimpse into a complex issue, but the fact that people mentioned female infanticide without being prompted indicates an awareness of sex-selection practices and confirms the existence of a very conservative and resilient patriarchal system.

5.3.5 Widowhood

The death of a husband represents the loss of a woman’s social status. As discussed before, women’s social existence is defined in relation to men; first their father and then their husband. Chakravarti (1995:2248) observes that “once a woman ceases to be a wife (especially a childless wife), she ceases to be a ‘person’ – she is neither daughter nor daughter-in-law”. Widows become a sort of “alien being” (Lamb 2000:217), unanchored from any socially valuable kinship. According to Hindu traditions, widows cannot remarry; unlike widowers who are allowed and expected to do so. It was pointed out previously that one of the reasons for social condemnation of widows’ remarriage, as a form of control over their sexuality, is the maintenance of caste purity. During the fieldwork I was also told by some male respondents that no one would marry a widow, as she is considered impure. As the local proverb written at the beginning of this chapter says, boys remain clean after ‘use’ but women are stained forever (Fieldnotes 2016). To signify their widowhood women should wear a white sari as opposed to the red sari worn by young brides, which symbolizes being sexually active (Lamb, 2000; Yadav & Sari, 2016). By observation, in the study villages only elder widows were strictly complying with the white sari Hindu tradition, possibly indicating some intergenerational changes in the adoption of norms.

After the death of their husbands, young widows usually remain with their in-laws where mistreatment and marginalization are common (Chakravarti, 1995; Hendrickson et al., 2018; Sabri et al., 2016; Yadav & Sari, 2016). Widows are generally perceived as a burden for the

family, which often leads to verbal and economic abuse by members of the extended family on whom they fully depend.

Mallika is a GC widow, in her 70s at the time of the interview. Her husband passed away when she was very young, leaving her with three daughters to raise on her own. After the death of her husband she had no option but to stay with her brother-in-law, as she said: *“widows don’t have any choice, they depend on family members”*. Mallika reported years of mistreatment and discrimination, which ended only after she left her brother in-law’s family six years before the interview. When I interviewed her, she was living on her own helped by one of her daughters who she purposefully married to someone from the same village so that she could be looked after. Remembering about her life with her in-laws, Mallika said:

After my husband’s death, and until I separated from them [in-laws], I only took two meals per day. While everyone was taking breakfast, I was skipping it. My brother in-law didn’t give us enough food. He never gave us any clothes [...] When my daughters finished the primary school I asked him why they couldn’t continue their studies and he said that there was no money [...] When they were sick he always refused to take them to the hospital and wanted us to use traditional medicine. I used to ask for help to the villagers. I gave them money to buy the medicines for us even though I was not allowed to go outside, not even to our neighbours’ house. I wished I could go outside at that time [...] Now I go everywhere (Dakhinaveda_24).

Acquisition of property – such as land – by the in-laws is also often reported by widows (Sabri et al., 2016). Mallika said that her brother in-law took her husband’s agricultural land and that he never wanted to give it back to her and her daughters. Only when her son in-law intervened did he give them some paddy from which her daughter has yielded 50 Kg of rice.

Contrary to studies reporting community discrimination (Chakravarti, 1995; Hendrickson et al., 2018; Sabri et al., 2016), solidarity from community members emerged as a crucial support for widows. In some cases, the villagers found jobs for young widows to help them earn a little income. Saroja, 46-year-old, GC, was given a job as a cook and has received invaluable support from the community since her husband passed away. She said: *“The villagers respect and protect me. They look after me as if I were their sister [...] they also*

support me emotionally. My in-laws never supported me or my children, nor emotionally or financially” (Khaita_21).

Since her job at the school, Saroja has financially separated from her in-laws, however they still live under the same roof.⁴¹ She struggles to fully provide for her family, occasionally skipping meals, but her brothers help when there are extraordinary expenses such as medical bills. Saroja described her life as *“full of sorrow”* but, as she said: *“I don’t want to depend on others. I must be a strong woman for my children”*.

Social support has a pivotal role in widows’ resilience and ability to endure life after the death of their husbands (Hendrickson et al., 2018). A lack of community support significantly increases their vulnerability, as in the case of Chandrika, OBC, in her late 40s. She had lost her husband two years before the interview. Her son migrated to Bangalore with his wife and so she was left by herself to take care of an elder uncle in-law. Chandrika reported suffering from food scarcity. She was very emotional when she talked of asking in vain for a job from the village development committee. In her words:

They [villagers] never help me. I am eligible for the widow pension but I still haven’t received it, despite applying after my husband’s death two years ago. I asked them [villagers] to help me get my pension. I went to the Panchayat office but I’m alone and I’m a woman. Nobody listens to me. I have no voice. Women need male mediation to deal with outside institutions (Khaita_18).

In the absence of community solidarity widows face greater challenges in accessing assets and resources and escaping from abusive intra-household relations in their husband’s families. It is important to point out that despite some widows’ lack of support, as was the case for Chandrika, in the study sites there was no evidence of community stigmatization or verbal harassment as observed in other South Asian contexts (Hendrickson et al., 2018; Houston et al., 2016; Sabri et al., 2016).

⁴¹ This is one of the reasons why she did not want to take the interview at her house and asked to meet at a friend’s house.

5.4 Caste and gender intersections

In the context of India, agency and gender relations cannot be fully understood without consideration of intersecting caste dynamics. Control over women's mobility, sexuality and labour may find its roots in the maintenance of caste honour and caste status (Anandhi, 2013; Chakravarti, 1993; Kandiyoti, 1998; Nightingale, 2011a). Classic patriarchal practices are complicated and reinforced by caste-based norms. For instance, in Hindu society caste purity is considered the responsibility of women. As a consequence their mobility and sexuality is controlled and restricted to prevent inter-caste intercourse and safeguard caste purity (Chakravarti, 1993). Endogamy is one practice through which caste purity is maintained, aimed at preventing the risk of inter-caste attachment (Ambedkar, 2014). It is most often manifested through arranged marriages in which caste honour is upheld, and includes practices such as Sati in which widows immolate themselves after the death of their husbands to avoid any risk of relation with men from other castes. Although there was no evidence of Sati in the study villages, a widow's remarriage is socially unacceptable as earlier discussed in this chapter.

Women who venture outside their traditional space, being the household or the village, challenge their household but also the honour of their caste by exposing it to the risk of 'contamination' (Fieldnotes 2016). They are therefore punished by the household as well as community members belonging to the same caste. Some studies observe inter-caste differences in control over women's mobility and labour, pointing to more rigid norms and higher levels of control over upper caste versus lower caste women (Rogaly, 1998). As highlighted before, Dalit women are generally more likely to take up paid work activities, having more freedom of movement. However, the same cannot be said for the study area where there was no significant difference observed in women's mobility across castes. Women belonging to SC, OBC or GC were equally restricted in movement, being able to freely move only within the village – with the exception of young daughters-in-law who are sometimes confined within the household. To move beyond the boundaries of the community women have to ask for permission from either their husbands or in-laws and even then they need to be accompanied by someone. Grocery shopping and any activity undertaken outside the village is indeed traditionally undertaken by men.

Caste discrimination rarely emerged as an issue, but it is unclear whether this was due to the fact that people were not inclined to talk openly about it or because it was not so

pronounced. As noticed in Chapter 3, in the villages there was a visible spatial division between SC households and upper castes. SC households are generally clustered in the most vulnerable and less developed areas of the village, and they use their own water pump suggesting that beliefs of 'pollution' might still persist. As noted also by Nightingale (2011) in Nepal, restrictions on access and handling of water and food are the most characteristic features of the normative caste system. Nidhi, 49-year-old, GC, said:

We are higher caste people. We do not touch them [SC] as it is our cultural practice. They [SC] are not allowed in our house. If we touch them while we cook food, the food is spoiled. We won't eat it (Khaita_07)

SC are in fact not allowed to enter the house of upper castes, especially the kitchen. Only in times of emergency, such as during storms and floods, do some upper caste households living in pukka houses offer shelter also to SC.

Despite people from all castes sitting in community groups and village committees, some respondents hinted to unequal decision-making power. For example, Urmi, 27-year-old, SC: *"Our participation and voice is very low because we are SC. GC people take all the decisions. They are the highest caste and we are the lowest. That's why they have more power"* (Khaita_02). Urmi is also a young daughter in-law, which may further influence her ability to participate in decision-making and public spaces. The visibly unequal distribution of resources in the villages (i.e. lack of concrete roads and fewer water pumps in areas occupied by SC) and unequal voice over decision-making at community level suggest that caste discrimination is present.

Finally, an aspect that did not directly emerge in this research but that is worth mentioning is that caste-related normative structures could also counteract the influence of patriarchy. For example, Anandhi *et al.* (2002) observe in their study that upper caste women in Nepal did not respect norms of patriarchy and masculinity when relating to SC men. This further confirms the need to analyse gender in relation to the full spectrum of social identities that influence power and oppression.

5.5 Conclusions

This chapter has provided an in-depth analysis of power and normative structures in which gender inequality is rooted. The analysis was grounded in the overarching concepts of

agency and empowerment explained in Chapter 2. Although this study does not measure women's empowerment per se, understanding the underlying factors that shape one's ability to make strategic life choices – defined as empowerment - is key to identifying the effects of exogenous (i.e. climate change) and endogenous (i.e. migration) processes on men's and women's well-being and adaptive capacity. The analysis in the chapter started by investigating intra-household power hierarchies and discussing how social norms affect domestic power structures in patrilinear and patrilocal households (section 5.3). The mutable nature of power dynamics emerged in the discussion, showing that social status and voice within the household may change through stages of life and/or following impactful life events (i.e. the birth of a son or the death of a household member). The section brought attention to intra-feminine power structures, according to which young daughters in-law usually occupy the most vulnerable positions in the household while mother in-laws sit at the top of the hierarchy, often safeguarding gender oppressive behaviours. Contextualised analyses of the complex functioning of hierarchies amongst women are as important as traditional analyses of dominance of men over women. Women's life and well-being is in fact shaped by men-women relationship as much as by relationships of power between women (Cornwall, 2007; Guérin et al., 2013). Age and kinship emerge as critical identities defining power and vulnerability.

As discussed in section 5.4, patriarchy manifests, and is reinforced, in multiple ways. The section zooms into the root mechanisms of patriarchal norms and their intersections with Hindu traditions. Beliefs about men's and women's social roles are so deep-seated and embedded in the society that they are often also internalized and justified by the oppressed. Traditional practices related to control over mobility, sexuality and access to resources limit women's participation to social and public life besides constraining their voice over decision-making in the household. It was, however, observed that in situations of strict subordination women's agency may manifest in less expected ways – for example by complying to patriarchal norms to preserve family harmony and caste honour. Contextualising agency and empowerment is therefore of crucial importance, as they do not unfold in standardised ways. An individual's perception of what is worth doing is greatly influenced by social structures.

Finally, the chapter showed intersections between caste and gender. It pointed to interweaved patterns of oppression but also showing how caste ideologies may prevail over

patriarchal structures, as in the case of upper caste women who break patriarchal norms when they relate with SC men. In this way, analysing gender through multiple lenses allows us to grasp the full spectrum of inequalities and power dynamics beyond dichotomies of men versus women.

This chapter contributes to the literature on gender in the context of South Asia, expanding on the intersection of social identities that generate multifaceted forms of oppression and privilege, even within the same category. By delving into the roots of these mechanisms it is possible to better examine how internal and external processes can remodel gender relationships and power dynamics over time. The following chapter will analyse migration patterns and dynamics through the lens of social differentiation. Chapter 8 will then delve more closely into the effects of migration on the power structures discussed here and the differentiated impacts of these changes on the adaptive capacity of the left-behind women.

CHAPTER 6. INTERSECTIONAL DYNAMICS OF MIGRATION: DRIVERS, PATTERNS AND IMPACTS

6.1 Introduction

This chapter undertakes an in-depth analysis of migration in the study villages by unpacking drivers, patterns and outcomes of mobility. Chapter 2 highlighted the complexity of migration processes and the need to gain holistic understandings of the environment-migration relationship. Chapter 3 outlined the scarcity of data on migration in Odisha, particularly in the study area, while Chapter 5 unpacked power structures and root causes of inequality through the lens of gender, age and caste. Against this background, this chapter aims to analyse migration characteristics at household and intra-household levels in relation to social, economic and environmental conditions, as well as their differentiation across social categories. The perspective is that of the women who remain behind in migrant sending households, mainly migrants' wives and mothers. The analysis also includes non-migrant households to consider issues of immobility and better understand why some people move and others do not. Involuntary immobility is rarely investigated, however it is of great importance especially in the context of climate change where established scholarship indicates that it could be a possible effect of worsening climatic conditions (Black et al., 2013).

The limited available data on out-migration, especially at district level, makes it difficult to draw a clear picture of mobility in Odisha. Migration studies have predominantly focused on the western and southern districts, with less knowledge on migration dynamics in the coastal regions. Yet, migration from coastal Odisha has been increasing in recent decades as the region has witnessed rapid development (Hazra et al., 2019). In contrast to western and southern regions where female labour migration, especially of SC and ST women, has been observed (Jha, 2005; GoI, 2010b), migration out of coastal Odisha seems to be typically male dominated (Hazra et al., 2019; Sharma et al., 2014) suggesting different gender and migration dynamics of which little is known. Literature on migration in India highlights the importance of understanding mobility within the context of the caste system and accounting for intersectional identities (Borooah et al., 2014; Deshingkar, 2017; Rogaly, 1998). Despite increasing empirical evidence that gender and caste dynamics continuously shape drivers

and outcomes of migration, national statistics still fail to provide accurate caste and sex-disaggregated data, especially at district level. Instead, the tendency is to conflate differentiation into homogenous analytical categories (e.g. in-migrants and out-migrants) without providing information that is fully representative of diversity. This chapter attempts to address these knowledge gaps on migration in coastal Odisha by providing a close look into mobility dynamics through different axes of social differentiation (i.e. gender, caste, class).

The discussion will mainly draw on data from in-depth interviews but will also use data from FGDs and PRA to provide insights into community-level perspectives on migration patterns, drivers and impacts. The FGDs represented an opportunity to hear men's perspective of migration. The chapter offers an overall picture of the various migration dynamics structured around the main themes that emerged from the data analysis but it also gives space to individual migration stories to reveal the depth and diversity of experiences, perceptions and motivations.

The chapter is structured as follows: Section 6.2 sets the context by providing an overview of migration in Odisha before delving into the complexity of migration patterns and dynamics of the study area, the Mahanadi Delta (section 6.3). Section 6.4 unpacks elements of social differentiation across the different types of migration (i.e. temporary, permanent, internal, international). The following discussion looks at key intersecting factors influencing the decision to migrate (or to stay) (section 6.5). Section 6.6 expands the analysis of migration drivers, investigating the role played by environmental factors. Finally, section 6.7 delves into the differentiated outcomes of migration, focusing on socio-economic aspects and household level impacts, setting the stage for the discussion, in Chapter 8, on the interconnections between male outmigration, gender and power structures, and adaptive capacity.

6.2 Migration in the context of Odisha

Migration is deeply rooted in Odisha's history and intimately linked to its economic underdevelopment (compared to other states in India), great inter-district socio-economic disparities and high exposure to multiple climate hazards. Internal (intra-district, inter-district and inter-state) seasonal migration has traditionally been a common form of mobility in the state to cope with the seasonality of agriculture and compounding effects of poverty

(Mishra, 2016). Studies conducted in drought-prone areas in western Odisha suggest a link between migration patterns and environmental stresses (Jülich, 2011; Robson & Nayak, 2010).

Internal migration movements have been traditionally intra- and inter-district, however inter-state migration has been on the rise in the last decades while international migration remains still limited (Census, 2011). Recent government estimates point out that in the last ten years the number of migrants from Odisha to other states has increased threefold (from 55,000 in 2007 to over 146,000 in 2015: Pradhan, 2016). Domestic remittances have grown since 1990s. In 2007-2008 Odisha was the 6th highest recipient of domestic remittances in the country, receiving the equivalent of around 14.25 billion dollars especially directed towards rural areas (Tumbe, 2011).

The largest outmigration flows seem to originate from the poorest southern and western districts where, as noticed in Chapter 3, there is a higher incidence of poverty, particularly among SC and ST. Throughout history, the relatively wealthier and resource abundant coastal districts have been destination areas for migrants (GoO, 2011). However, labour migration from these areas has gradually increased in the last two decades (1990-2016). Unofficial estimates, in fact, suggest that 45 percent of total out-migration comes from coastal regions while 55 percent of migrants originate from southern, western and northern districts (Sharma et al., 2014). In the extensive survey conducted for the DECCMA study, the Mahanadi Delta - which comprises five coastal districts - showed a net trend of out-migration, prevalently internal (Hazra et al., 2019). The next sections will take a closer look at migration dynamics in the Delta.

6.3 Migration patterns in the Mahanadi Delta

Migration in the study area emerged as mostly permanent and inter-state. Seasonal migration both within and outside Odisha, is still present but the in-depth analysis shows a pattern of progression from temporary to longer-term movements.⁴² Intra-state migration that is considered the prevalent type of migration in the state (Census, 2011) is limited to

⁴² A permanent migrant is broadly considered someone who stays at his or her destination for more than one year and has no plans to return permanently. In the study areas permanent migrants usually return to visit their family once a year (in the case of internal migration) and remain for 15-30 days. Seasonal migration is a type of temporary migration, usually cyclical, closely related to agricultural seasonality. In the study area seasonal migration is usually undertaken twice a year between August-November and March-June.

few cases, and international migration is relatively rare. Yet, international migration appears to be on the rise and is a desired livelihood strategy.

In terms of distance and spatial patterns, 44 out of 53 households with migration that I interviewed had one or more members who had migrated to other Indian states, either seasonally or permanently. Only five households reported intra-state migration, to Bhubaneswar or other districts where job opportunities arose. International migration was reported in four households. The distance of migration does not appear to be strictly, or directly, related to a particular household profile. Intra-state movements are linked to either wealthier, generally GC, or poorer households, SC and OBC. A closer look into this differentiation shows interesting dynamics revealing that the reasons (or constraints) for moving within Odisha or inter-state, and the conditions under which migration is undertaken, differ significantly among social groups, as does the experience and outcome of migration.

Raadhi, 50-years-old, GC, lives in a nuclear household with her five sons. Her husband is a government official in Bhubaneswar. He used to run a grocery shop in Jarimula, the closest village market, where his family also owned some agricultural land. The shop was not being very remunerative and most of the land was lost to the river due to coastal erosion. His brother therefore suggested he go to Bhubaneswar and helped him to find a job through his networks. He moved to Bhubaneswar where he first started to work for the government as a daily labourer until he secured a permanent contract as a government employee around 15 years before our interview, when he was almost due to retire. Raadhi and the rest of the family remained in the village. Her husband used to visit them every month and stay for two to three days. By migrating he was able to find a stable and relatively well-paid job, which allowed all their five sons to get a high school degree, two of whom are now attending university. When I asked Raadhi whether her husband had ever thought about leaving Odisha she said that there was no need since he was able to find a good job nearby (Dakhinaveda_21).

Access to good social networks and education emerge as crucial elements in Raadhi's story and are generally both considered to play a significant role in shaping destination and outcomes of migration, often reproducing caste inequality (Deshingkar, 2010; Mishra, 2016). Access to social capital can also be self-reinforcing as migration can further expand

social networks for both migrants and their households of origin. The importance of social capital and social networks in defining migration, potentially reproducing inequality, is supported by a large body of literature drawing on different contexts (Haug, 2008; De Haas, 2010) and is also a recurrent issue emerging from the analysis.

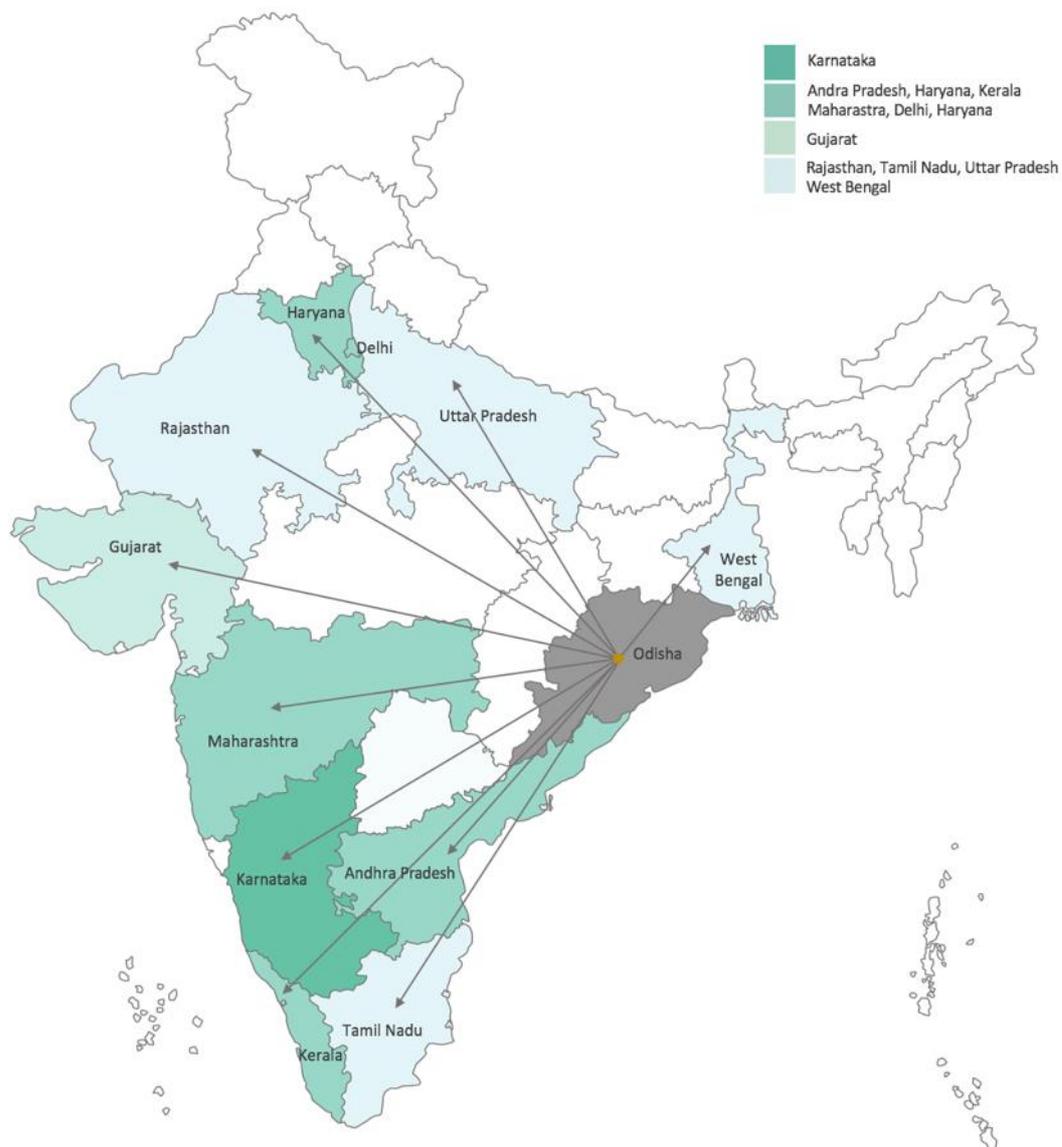
Not all migrants have access to social networks. Surati, 30-year-old, SC, who lives with her in-laws and four sons, tells the story of her husband's migration, his struggle to find a decent job in Odisha as seasonal migrant and, at the same time, being unable to migrate to another state because of lack of connections, resources and education. In Surati's words: *"He [her husband] is illiterate, where do you think he could go? We do not know anyone and we do not have money to pay agencies and middlemen"* (Khaita_09). Her husband therefore migrates during the lean season - from March to June and from August to November - to different districts depending on where he finds occasional jobs. The rest of the year he stays in the village taking care of the small plot they cultivate as sharecropping for self-consumption. His usual jobs as a migrant are badly paid and precarious. Surati says that the money is barely enough to survive and they often only eat rice for long periods because they are unable to buy vegetables or grow them, as they do not have a kitchen garden. Because they cannot find their caste certificate, they cannot even access any social protection scheme for SC households.

In contrast to Raadhi's husband, for whom intra-state (shorter-distance) migration was a choice facilitated by access to good employment opportunities and social networks, for Surati's husband it is the only possible option given a lack of education, social capital and resources acting as barriers to longer-distance (i.e. interstate or international) movement. Social differentiation and different pre-migration socio-economic conditions not only contribute to determine the type of migration but are also reinforced through the different outcomes of migration processes. Whereas poor migratory employment opportunities for Surati's husband reinforced their low income status, Raadhi's husband's migration allowed their children to pursue higher education and improved household income, widening the inequality gap.

Inter-state migration is mainly directed towards urban areas. The destinations that have been mentioned the most include Bangalore (Karnataka), Delhi, Mumbai (Maharashtra) and Ahmedabad (Gujarat) with few migrants moving to Hyderabad and Pune in Andhra Pradesh

and to Kolkata (West Bengal) as well as individual cases of migration to Rajasthan and Tamil Nadu (Chennai). Figure 16 provides a visual representation of out-migration movements from the study area. These patterns cannot be generalised as they are based on the relatively small number of interviews conducted and are thus not representative of the district population. However, it is interesting to notice that they are consistent with the findings of the extensive quantitative analysis of migration in the Delta conducted by DECCMA (see Safra de Campos et al., 2019:164).

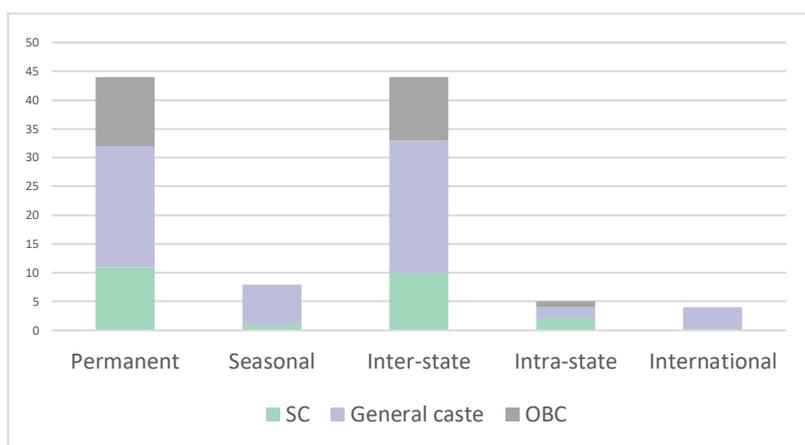
Figure 16. Destination of interstate out-migration from the study villages



Source: Author's elaboration based on data from the in-depth interviews (households with inter-state migration, N=44). The colour gradient indicates the states receiving more to less migrants from the study area – from high to low intensity.

In terms of duration, migration is mostly permanent. Seasonal migration is relatively rare and almost exclusively undertaken by GC households. This pattern contradicts those identified by existing literature on migration in India which state that seasonal migration is prevalently associated with SC, ST and OBC while permanent and semi-permanent migration are dominated by GC households, which are usually socio-economically better-off (Bhagat, 2016; Mishra, 2016). Figure 17 shows caste differentiation across the different types of migration identified in the analysis (by distance and duration).

Figure 17. Type of migration (distance and duration) by caste



Source: Author's elaboration based on data from the in-depth interviews (migrant sending households, N=53)

Although there is no common pattern explaining this social characterization, it is noticeable that many of the interviewed households with seasonal migration hold productive assets, whether agricultural land, livestock, or both. It may therefore be possible that for these households seasonal, temporary movements, are more compatible with the management of other livelihood activities while offering the opportunity to increase income and invest in rural livelihoods. This is exemplified in Rabani's story (26-year-old, GC). Rabani's husband migrates seasonally to Delhi where he works as a plumber. He started to migrate before their marriage when his family was facing financial problems. Thanks to the money he has earned in Delhi over the years, they could buy several buffalos and at the time of research, they had a small dairy business which provided a good income. They also own two acres of agricultural land, enough for subsistence needs and sometimes also providing a little surplus that is sold in the market. Rabani's husband migrates during the dry season when the dairy production from the buffalos decreases. During his absence, some villagers look after the herd in exchange of a share of the revenue from dairy products. In the monsoon season, when the production is high, her husband returns to fully take care of the business. Rabani considers migration essential for the family to provide a more stable income and ensure that there are enough resources to invest in the buffalo business. It also provides some extra income for savings, which, for example, has enabled them to build a pucca (concrete) house, and which she notes as being important for their children's education (Khaita_14).

Seasonal migration is sometimes the best compromise, especially in nuclear households, to earn some off-farm income while still being able to maintain agricultural activities to which migrants return in between lean seasons. As in the study area, women do not generally

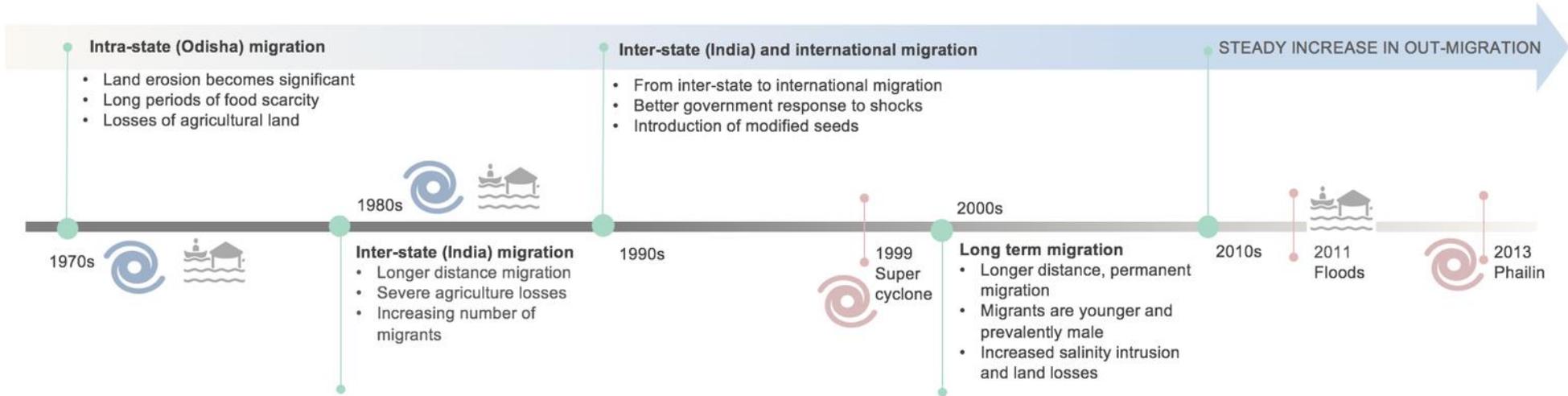
engage with agriculture beyond kitchen gardens, if there are no other male members in the household or extended family locally nobody is left to take care of agricultural fields unless waged labourers are hired. Although in the villages agriculture is mainly for self-consumption, it remains important for food security and to serve other household needs (i.e. dry grass from agricultural waste is used for fuel and roofing).

6.3.2 Changing patterns of internal migration

In the research villages, migration has become routinely part of everyday rural life. As income generating activity, migration is progressively overshadowing agriculture, which is no longer considered profitable but is still maintained by migrating households to address their self-consumption needs and perhaps also to fulfil a ‘sense of belonging’ to rural roots – the expressions “*we are farmers*” or “*this [agriculture] is our life*” were often used, especially by male participants, in FGDs throughout the fieldwork. In all three villages, the number of migrants is perceived to have increased over the last 10-15 years and even in non-migrant households it is not rare to find members with relatives who are or have been migrants. The lack of historical official census data at village or district level makes it difficult to identify clear trends. However, I tried to trace some dynamics drawing on people’s perception and historical memory of migratory movements. I was especially interested to see whether they would relate any shift in migration patterns to climate events, and why. Historical timeline exercises allowed participants to recall some key changes and to situate them in time. Figure 18 shows these results for men and women FGDs.⁴³

⁴³ See chapter 3 for a more detailed explanation of the type of PRA exercise.

Figure 18. Historical timeline: migration and climate change



Source: Author's elaboration from Timeline PRA Men and Women FGDs Dakhina (FGD25-D-M; FGD26-D-W). Men and women results have been merged as they did not show relevant differences. The figure is illustrative of the migration patterns that also emerged in the other two villages.

Most participants position migration as starting in the 1970s, predominantly within Odisha, which they often related to the beginning of a decline in agricultural production leading to a rising need to secure livelihoods. As mentioned by the one participant: *“Before the 1970s there was no migration, the land was enough and more fertile, and agriculture productivity was higher and sufficient for the family. The first families started to migrate after the 1971 cyclone”* (FGD25-D-M). The 1970s was flagged also as the period when soil erosion started to significantly affect many households. Although it did not emerge in the FGDs, it is worth noting that these were also the years when the Green Revolution in India was starting, producing interregional disparities and affecting many poor farmers (A. K. Chakravarti, 1973). This is to say that correlations between migration and environmental changes (i.e. migration-soil erosion) should be contextualized within the broader socio-economic and historical landscape and do not necessarily suggest linear causality.

Changes in environmental conditions are in fact rarely mentioned by the participants in direct connection with migration, however they are often reported to affect livelihoods, and thus shape those factors that emerge as the main drivers influencing the decision to migrate, namely financial needs and lack of employment. Not only has the magnitude of migration changed over the years but also the type of migration patterns. Before the 1980s, movements in Odisha were prevalently rural to rural and shorter distance. In contrast, migrants from rural areas are now increasingly moving to large urban centers where they remain for longer periods (Jha, 2005a). The same trends are observed in the Mahanadi Delta (Safra de Campos et al., 2019). Both men and women focus group participants pointed to similar patterns in the study villages. If before the 1970s only a few people migrated seasonally to other rural areas, between the 1970s and the 1980s migration started to increasingly become rural to urban. Yet, this was mostly within Odisha, often even intra-district. In the 1980s many migrants from Kendrapara reached the nearby Jagatsinghpur district to work in the large construction site of the Paradip port which is now one of the busiest ports on the East coast of India. The 1990s were indicated as the starting period of out-migration to other Indian states and megacities where employment opportunities are generally considered to be better than in Odisha (see Figure 18).

The shift from rural-rural to rural-urban migration traces its roots in the processes of globalization and changes in agrarian settings recurring in many developing countries, including India (Harriss-White et al., 2013; Lerche, 2011; Mishra, 2016). For instance, since

the 1970s the coastal districts of Odisha have witnessed a rapid urbanisation accompanied by industrial expansion and major infrastructure plans (Hazra et al., 2019; Nayak, 2015) such as the Paradip port. The presence of the port has led to rising levels of pollution (Hazra et al., 2019; Mishra & Nayak, 2014) that have affected agricultural production in the nearby area, disrupting traditional rural livelihoods. Odisha agriculture has also experienced several changes, especially after the New Economic Reforms (1991) when policies shifted the focus from agricultural development programmes for poverty alleviation (early 1980s) to a surge for intensification, mechanization and promotion of new commercial crops (Pattanaik & Mohanty, 2016). These new patterns devalued traditionally-grown crops and affected many smallholder farmers who were unable to invest capital in expensive inputs and technologies. A final remark should be made about demographic changes in the study area to ground the previous discussion on historical changes in migratory movements. In the last two decades, the Mahanadi Delta population has rapidly increased at an annual rate of 1.4% reaching a total of eight million in 2011 just in the five coastal districts (Hazra et al., 2019). The discussed migration flows are therefore to be contextualised in this scenario.

6.3.3 From internal to international migration

In the context of shifting migration dynamics, a growing pattern of international migration has emerged, especially towards the Gulf States. Between the two fieldwork periods (over the timespan of a year) an increasing number of research participants reported to have relatives or friends who migrated – or were thinking about migrating - internationally. Migrating internationally is seen as an opportunity to bring a substantial positive change to the household. However, not everybody can afford it. At the time of the fieldwork, international migration from the study villages was undertaken only by GC households, showing a caste differentiation. Even for better-off families, the financial cost of international migration is high and families often need to take on debts. Migrants who migrate to international destinations have to pay large sums of money at different stages of the migration process to various individuals and organisations that facilitate their migration. The money borrowed to cover this cost is usually paid upfront to brokers⁴⁴ and service agencies which prepare the documents, arrange the travel and put the aspiring migrants in contact with prospective employers at destination. Contractors are usually repaid through

⁴⁴ Brokers can be local influential persons, return migrants with contacts at destination and knowledge of international migration requirements or members of agencies involved in migration (Faist, 2014). In the study area, brokers were generally described as outsiders visiting the villages and presenting employment opportunities in international destinations.

forms of bonded labour that generally last two years, during this time migrants are not allowed to return home (Fieldnotes 2016). Bonded labour is a widespread phenomenon in India that has been well documented and researched (Brass, 2008; Breman, 2014; Deshingkar, 2010, 2018; Srivastava, 2005). Carswell and De Neve (2013) provide an interesting analysis of the gradual shift from labour bondage in agriculture to 'debt bondage' in the industrial sector with cash advances that lock migrants into debt traps and exploitative working conditions. In the study area, bonded labour emerged only with reference to international migration and it was a well-known phenomenon in all the villages by both migrant and non-migrant households.

Chitra, 32-year-old, GC, describes the experience of her husband's migration to Kuwait after spending many years as an internal migrant in Delhi and Mumbai. She said that the family assumed a debt of Rs. 1 lakh to pay for the agency that found him the job in Kuwait and for the broker who put him in contact with the agency and prepared the documents needed for the trip. Part of the debt was contracted directly with her husband's employer, as a cash advance to be repaid through work. The conditions upon arrival in the destination were not as expected. For example, the company retained 25 percent of his salary and did not give him food and accommodation as promised. Nevertheless, he was able to send back home Rs. 10-15,000 per month, which is around three times the average amount remitted by internal migrants. At the time of the interview Chitra's husband was in the village, as he had returned home at the end of the two contracted years when the debt was repaid. He was already looking for another job opportunity abroad. He had paid the deposit to a new agency and had done some job interviews. While he was waiting, he worked a few days a month as wage labourer in nearby villages. I asked Chitra why her husband was still determined to migrate internationally despite the not so good experience that he had in Kuwait. She replied: *"My husband worked for 10 years in Delhi and Mumbai but since he went to Kuwait he does not want to migrate within India anymore. Now he knows that abroad he can earn much more money"* (Nuagan_17).

Other stories of international migration are very similar to Chitra's. Common elements include the shift from internal to international migration because of better wages, relatively high and regular remittance flows (Rs. 10-15,000 on average), two years of bonded labour, as well as generally bad living conditions for migrants. Internal migrants do not seem to experience the two-year bondage, however brokerage is also reported in the context of

interstate migration, especially in places such as Nuagan where there is a generally low access to information, less established migration networks and low levels of education. Similarly to international migration, brokers and mediators' promises of good working and life conditions are often unmet.

6.4 Who migrates?

Labour migrants from the study villages and the Delta (Safra de Campos et al., 2019) are predominantly educated young men. Interviews and focus group discussions suggest that the age of first migration has progressively reduced over the years with some youth now migrating as young as 15 years, usually joining their fathers or other family members. The National Sample Survey (NSS) 2007-2008 (64th round) shows a relatively high presence of women migrants from coastal Odisha (GoI, 2010a), however that is mainly because this type of statistics does not distinguish between marriage migration and other types of migration. This study, in fact, shows that women migration is predominantly associated with marriage⁴⁵ as social norms constrain women's mobility and access to paid work (Chapter 6). All of the women that I interviewed left their native village after marriage. In most cases, the villages of origin were located in the same district or nearby, since marriages tend to be 'arranged' within narrow social networks. In contrast to this scenario, in western Odisha there is a much higher percentage of women labour migrants, notably from ST and SC. This is probably related to the larger presence of these castes, which are usually characterized by less restrictive gender norms around mobility and paid work (Sharma et al., 2014).

6.4.1 Interlinkages between migrants' occupation, social networks and caste

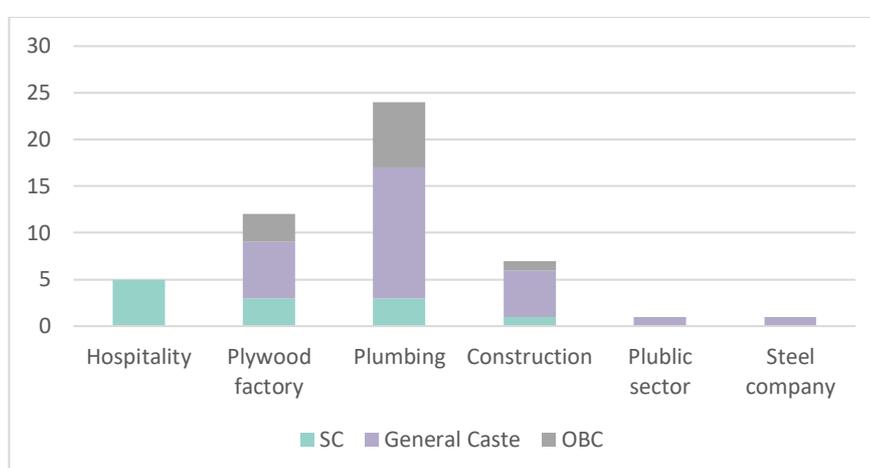
In the communities researched, young migrants are usually married and prevalently from GC households, even though caste-wise there is no clear-cut pattern. Plumbing is the most widespread occupation, followed by waged labour in plywood factories, construction and hospitality (Figure 14). A closer look at the sectors of occupation and the villages of origin shows interesting links. Social networks emerge again as crucial in determining the destination and type of work that migrants do.

From the perspective of caste differentiation, in Khaita all the interviewed SC households had migrants employed in the hospitality sector. Moreover, with the exception of one case of intra-state migration, all SC migrated to the same destination in Andhra Pradesh. As

⁴⁵ According to patrilocal cultural norms, women leave their native household to join their husband's household upon marriage (see Chapter 6).

illustrated in Figure 19, the hospitality sector is actually dominated by SC. Social networks for plumbers also show a sort of caste differentiation and a predominance of GC and OBC. In his analysis on caste, migration and social networks, Banerjee (1983) observes that migrants tend to connect with those who belong to the same caste, hence the flow of information between sending and receiving areas, as well as assistance at destination, maintain a caste-based or kin-based structure. It was also pointed out before that social networks influence the type and experience of migration across caste groups, confirming that different social networks contribute to different types of migration (Atamanov & Van Den Berg, 2012).

Figure 19. Employment at destination disaggregated by caste, in all three villages

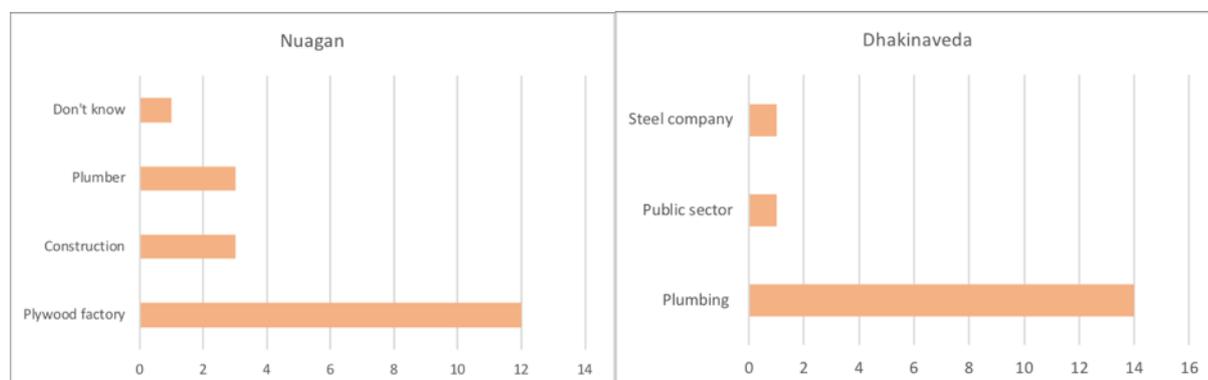


Source: Author's elaboration from in-depth interviews

The concentration of migrants in particular trades or sectors by village of origin is particularly visible when looking at Dakhinaveda and Nuagan (Figure 20). In Dakhinaveda almost all migrants work as plumbers, either in the State of Delhi, Maharashtra or Karnataka. It is worth mentioning that Kendrapara is renowned for its skilled plumbers all over India. In 2010 the Government of Odisha established the 'State Institute of Plumbing Technology' in the district; an institute providing formalized trainings for plumbers (Sharma et al., 2014). Access to certification and formal training increase Kendrapara's migrants' employability in the sector outside Odisha and afford them relatively high earnings. Overall, the plumbing sector provides the highest number of occupations for migrants in the interviewed households. Yet there is a particularly high concentration of migrants from Dakhinaveda moving towards the same destinations. This suggests the presence of strong networks in what Banerjee (1983) calls 'chain migration': urban-based contacts and information sharing between relatives or

individuals who are not family members (e.g. members of the same community).⁴⁶ One of the effects of chain migration is the concentration of people from the same village or the same kinship network in the same occupations (Ibid.).

Figure 20. Employment at destination in Nuagan and Dakhinaveda



Source: Author's elaboration based on interview data

A similar pattern is observed in the village of Nuagan where most migrants are employed in plywood factories, mainly in Karnataka and Kerala with a few streams heading to Gujarat and Uttar Pradesh. In the other two study villages, plywood factories were never mentioned as a sector of employment for migrants, even in FGDs or interviews. This might be due to the different geographical location, hence lack of interaction between these villages and Nuagan which is situated in an isolated position, at the border of Rajnagar block.

6.4.1.2 Informal and precarious jobs

Migrants are generally employed in the informal sector at their destination, often lacking decent working conditions and job security; a finding corroborated by other studies on outmigration in Odisha and India (Deshingkar, 2018; Samantaray, 2016). The informality of migrants' work arrangements places them at risk. Health issues and injuries at work were frequently reported in interviews. Because the cost of healthcare at destination is too high for the migrants to afford, and the companies where they work do not take responsibility for covering these costs, migrants usually return to their home villages to seek medical treatment when they suffer severe illnesses. Their inability to work and the high cost of health treatments often force families into debt, especially in households where migration is the only source of income. The following is an extract from the interview with Bhani, 49-

⁴⁶ Interactions between non-family members are also referred to as 'serial migration' (Banerjee 1983).

year-old, GC, who describes how the consequences of such injuries are not just economic, but extend to social aspects of life, negatively impacting other – in this case younger – family members. Bhani's husband was a plumber working in Odisha, traveling from district to district where he could find work, until he injured himself while drilling a borewell. In her words:

Our only source of income was the money my husband was sending home. Now that he has been unable to work for the past 6 months we had to ask for loans. We have already accumulated Rs. 80,000 of debt. [...] I am very concerned, I am restless. We do not have any money. I want my eldest son to continue his studies but if my husband will not recover, he will have to drop out of school and migrate himself (Khaita_07)

Bashkar's story offers a rare perspective for this study, that of the migrant, allowing a look into migrants' experience of informal employment, exploitation and lack of minimum labour standards. Bashkar, GC, is a migrant in his mid-30s that I had the opportunity to interview during his return visit to one of the study villages. Although this interview was unexpected given the focus of this research, his story provides very interesting insights into labour and life conditions for migrants, and helps show the thin boundary that exists between forced and voluntary migration.

Bashkar started to migrate seasonally when he was very young, but mostly within Odisha. A few years before our interview, he decided to migrate to other states with the promise of better earning opportunities. When I met him he had returned for few days from Bangalore where he was working in a plywood company. I asked him about his experience:

Before going to Bangalore, the agency promised a lot of things but nothing is true. Nobody [migrants] got anything that was promised [by the broker]. When you get there, the situation is completely different. The living conditions are very bad, one has to work 12-14 hours [...] they don't pay you regularly and the salary is not as promised [...] they promised us food and shelter plus Rs. 300/day salary but when we arrived they told us that we had to take care of our food and pay for the accommodation. I was earning Rs. 9,000 per month but I had to pay for

the house and the food, which are expensive in Bangalore, that was not the agreement we had (Dakhinaveda_30)

In addition to the disappointment regarding salary and arrangements, Bashkar describes poor working conditions:

If someone was sick they never took him to the hospital. When one doesn't feel well and doesn't work as much as it is expected, they [contractors] beat you. We were paid irregularly [...] most of us took loans to migrate and needed to repay them [...] every time we asked for our salary because we had to send money home they beat us [...]. Migration is not a choice [...] if there were jobs here [in the local area] I wouldn't migrate. Who wants to migrate in these conditions?

Bashkar says that he was thinking of changing location and was in contact with some people in Kerala who promised a job in another plywood factory. However, he was worried about language barriers because he cannot speak Hindi and in Kerala people do not understand Oriya. Before leaving his house, I asked Bashkar how it feels leaving his family behind. In his words:

If I come to know that someone back home is sick or there is a family problem I can't work, I can't concentrate. Contractors don't allow you to go to see your family if there is a problem [...] I feel sad

Many of the aspects reported by Bashkar related to the challenges of migration. The vulnerability of migrants and the psychological burden of being far from the family did not emerge from the interviews with migrants' wives or mothers. What emerged, however, was that migrants rarely talk about their life with family back home.

6.5 Drivers of migration: a voluntary choice or a forced decision?

Migration from Odisha is described as distress-led (Bhatt, 2009; Deshingkar & Start, 2003; Sharma et al., 2014), a strategy for survival in response to high levels of poverty, livelihood losses and lack of alternative employment in rural areas, where the majority of the population lives.

The decision to migrate is influenced by multiple factors, interacting on many different levels. As theoretically conceptualized in the New Economics of Labour Migration (NELM), migration is the result of considerations made at household level about economic needs, risks and social 'status' (Stark & Bloom, 1985; Taylor, 1999). Yet, individual characteristics (i.e. social identities) and cognitive factors (i.e. risk taking, motivation) also play an important role. Many of the interviewed women reported that their husbands discussed with the family before making the decision to migrate. Women's weight in such decision depends on various factors related to their position in the household and their relationship with the migrant (i.e. whether they were wives or mothers). Sometimes wives, especially when young and newly married, were just 'informed' when the decision was already made. 29-year-old Soumya, GC, who lives in a large extended household where she is the youngest daughter in-law said: *"He [husband] discussed with his brothers about migrating to Oman and then he informed me. I felt very bad at that time but I had no other option but to accept it"* (Khaita_12). Few women reported that they participated and agreed to their husbands' decision to migrate, as illustrated by the following quote from Uma, 28-year-old, SC: *"My husband migrated soon after our marriage. We do not have any agricultural land and he could not find a job. We both thought that it was better for him to migrate"* (Khaita_15). In extended households, parents can exert definitive influence in the decision to migrate. This is particularly the case when the aspiring migrant is the eldest or only son⁴⁷. Simran, 45, SC and Neha, 28, SC both reported that their parents in-law never allowed their husbands to migrate because they were their only sons (Dakhinaveda_06; Dakhinaveda_19).

Migration is most often described as a 'forced choice' by both men and women. The following quote from Chaadri, a 23-year-old, OBC, whose husband is in Pune, is a typical example of how the research participants describe their perception of 'forced migration': *"My father in law was working as daily wage labourer but we could not even have three meals per day. My husband was forced to migrate"* (Dakhinaveda_11). Bashkar's story is another illustrative case when he says that 'migration is not a choice' (section 6.4.1.2). If rigidly applying the commonly used definitions of forced vs. voluntary migration, most of the stories reported in this thesis would fall within the voluntary migration category.⁴⁸ However,

⁴⁷ Traditionally, eldest sons bear the primary responsibility of looking after their parents. In households with more than one son, the eldest usually remains with his parents while the others are free to move out.

⁴⁸ Despite the lack of universal definition, *forced migration* generally refers to migration movements characterized by an element of coercion (people migrate involuntarily) while any other type of migration (labour, family, education etc.) is assumed to be undertaken as a voluntary decision.

the evidence in this research confirms that the reasons for movement are mixed and that the level of volition in the choice to migrate should be carefully considered, especially in contexts of poverty and vulnerability where acceptable alternatives might not always be present (Erdal et al., 2018; Van Hear et al., 2009).

The following sections will discuss interconnections between the key underlying social, economic and cultural factors that influence the decision to migrate, to provide a more comprehensive and nuanced understanding.

6.5.1 Land ownership and mobility

Lack of agricultural land is often associated with financial problems and related migration, especially in the villages of Nuagan and Dakhineda where land erosion is significant. As illustrated by Sweeta, 38-year-old, SC: *“We are landless, we don’t have any other source of income. My husband has to go [to migrate] and we have to adjust to this situation”* (Nuagan_22). Similar reasons are reported by several respondents when asked what influenced their decision to migrate. Land-poor and landless households face higher economic difficulties. Despite declining profitability, agriculture continues to be crucial for subsistence and food security. Moreover, land is a valuable asset that facilitates access to credit. SC people are traditionally landless. They mostly work as agriculture labourers, with few of them sharecropping on small land plots. Land distribution reforms, put in place by the central government, attempted to address social exclusion in land tenure systems. Nevertheless, many SC households reported lack of land certificates or live on land that was lent to them by other villagers. Nitu, 27-year-old, SC from explains that all the SC households have lived for decades on a piece of land that belongs to someone else in the village: *“This land belongs to one of the villagers. He allows us to stay here, we have been here for three generations”* (Dhakinaveda_08). In the study area land issues are not necessarily caste-specific. Due to river bank erosion, several GC and OBC households lost their houses and land in the river and were forced to relocate elsewhere in the village where they could not transfer land rights. Deepa, 36-year-old, OBC, explains:

We had a house on the other side of the village but it went into the river. We had to relocate. This land belongs to the government. There are many people in

the same situation here [she indicates the main road]. We asked the government to give us a land certificate.⁴⁹ (Dhakinaveda_10)

The relationship between land tenure and migration is not clear cut. Gray and Mueller's (2012) study in Ethiopia shows that land-poor households are more prone to migrate and that the effects of drought are reduced when household land area increases. However, in other instances it was found that limited or no land ownership restricted mobility (de Brauw & Mueller, 2012). In Bangladesh, Mendola (2008) observed that better access to land had negative effects on temporary and internal outmigration but positive effects on international migration. Similarly, Gray (2009) found that in the Ecuadorian Andes short-distance outmigration was prevalently undertaken by landless households and significantly declined with increased land area.

The effects of land ownership on migration are nonlinear as many other factors interplay to shape mobility, but what can be asserted is that owning land is generally perceived by the respondents as providing at least an alternative to migration. In the words of Namita, 35-year-old, SC, whose husband had been in Delhi for 16 years:

We do not have agricultural land. We want to buy some but we have five children and we need to prioritize their education. If we had agricultural land my husband could return. He would not need to migrate. Until then, remittances are our only source of income (Dhakinaveda _14)

6.5.2 Employment and generational changes

Unemployment or lack of decent work opportunities are also among the most reported factors influencing migration decision-making. As a male focus group participant put: *“Migration only brings money, if we can find jobs here we would not need to migrate”* (FGD19-K-M). Even if work is available in nearby rural areas, it is generally occasional and the salary is below average. Government initiatives such as the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) and the Public Distribution Systems (PSA) have attempted to help households to overcome seasonal poverty and employment challenges, however they come with challenges as noticed in Chapter 4. In rural areas, even

⁴⁹ The families that lost their house in the river due to bank erosion, all relocated on the main road that leads to the village. They report to feel part of the same community despite being quite distant from the center of the village (Fieldnotes 2016).

when employment is available, it is often in agriculture and on-farm, making it less attractive to youth who represent the majority of migrants.

The drivers of rural youth migration are even more complex to disentangle. In addition to the social and economic factors already discussed, younger generations in developing countries are living through a massive process of rural transformation and globalization that strongly shapes their ambitions and aspirations. Lloyd (2005) illustrates how global forces are transforming the transition to adulthood, with magnified effects in developing countries and rural contexts, in which youth expectations about employment and life experiences are changing, often in conflict with traditional norms and values. In Odisha, Sharma (2007) observes that farming was not valued as a profession by youth, who even considered it difficult to find a bride if they were only practising agriculture. Thus, young men (and women) may not be as interested in on-farm employment as their parents and ancestors were. Low wages and low productivity make agriculture unattractive especially if compared to jobs in urban areas. Moreover, off-farm employment opportunities in the study area are very limited. This also suggests a change in the feelings of belonging to rural roots expressed by older generations. In the view of a male focus group participant:

Youth are not interested in agriculture. They want to earn quick money. That's why they migrate. We [elders] are worried about their lifestyle. They are far from home and they work in dangerous jobs (FGD23-K-M).

The discussion continued with participants debating the view that nowadays youth do not want to make 'sacrifices', preferring 'quick cash' earned through migration to agriculture, whose profits, if any, come in the long run. In another male FGD one of the elders expressed his concerns about the future as youth are abandoning agriculture and are unwilling to learn traditional practices. In his words: *"Youth are not practising agriculture or learning farm skills. When I die my sons will sell the land and they will have to buy rice. They will depend on purchased products"* (FGD23-K-M). Youth disengagement from agriculture is also detectable from interviews. Trisha, 40-year-old, GC, whose husband migrated to Rajasthan, in his 20s, to work in a steel company reported *"My husband has never learned agricultural skills. He was never interested in agriculture and migrated when he was very young. Agriculture is not productive enough to maintain a family"* (Dakhinaveda_20). Lack of non-farm jobs in the locality is a further trigger. Babita, 25-year-old, GC, said about her husband who is in

Bangalore: *“My husband didn’t even try to work in the agricultural fields, he looked around for other jobs but couldn’t find anything so he decided to leave”* (Khaita_11). A key informant that I interviewed at the Centurion University of Technology and Management (CUTM) in Bhubaneswar revealed an interesting aspect about youth and education. This is her point of view on a skills training programme that they run with youth from disadvantaged categories, mainly ST and SC:

There are government and private initiatives aimed at building youth capacities, also off-farm skills, to promote youth entrepreneurship in rural areas but we have noticed that trained people then migrate. It is a big challenge. We do not want to increase their skills for them to migrate. Agriculture is not seen as remunerative anymore. Youth do not want to engage in agriculture, especially if they are skilled (KII07-F).

The relationship between education and migration has not been deeply explored in this study but as previously shown in this chapter, illiteracy can prove a barrier to migration.

The one-sided perspectives of those left-behind may not tell the full story of why youth migrate and what their aspirations are. Nevertheless, they may help understand changes and possible future trends for livelihoods and mobility. It was particularly difficult for youth (men and women) to express their opinion in focus group discussions because of social norms related to hierarchy, age and behaviour.⁵⁰

Besides the drivers discussed in this part of the chapter, youth disengagement from agricultural knowledge and rural life is also likely being shaped by generational issues such as inheritance of land and low access to services and information, which act as barriers even if they want to stay. Additionally, macro-level factors such as structural and agrarian transformations, which may have resulted in declining agricultural productivity could in turn lead to labour shifts away from agriculture (Foster & Rosenzweig, 2008).

⁵⁰ According to local social norms of behaviour, youth should not intervene in the discussion and should not contradict what elders say. Furthermore, if an older male member of the household participates in the group discussion youth should not attend or should sit at the back (see Chapter 6 for further insights into social norms).

6.5.3 Social factors, health and debt

Economic difficulties may stem from family issues and underlying factors linked to social roles and responsibilities, as well as household structures. In the typical extended family structure, family splits into subsequent independent units commonly emerges as a factor that brings economic instability and becomes, in turn, a trigger of migration. Family splits may come along with loss of assets, for instance when agricultural land remains with the in-laws. The following excerpt is instructive here. Leela, 45-year-old, widowed, OBC:

My son migrated to Bangalore 10 years ago when we ‘separated’ from my brothers in-law. My husband had six brothers, we were part of the same household but because of some arguments we decided to separate. After the separation we faced economic problems, it was then that my son migrated to help us go through our financial needs (Khaita_18).

Significant social drivers for migration result from debt. Households fall into debt for a wide range of reasons, from loss of livelihoods due to poor health, to addressing consumption and family needs, particularly related to social obligations such as dowry payments. Migration is often the only way to earn some cash and repay loans.

First, health issues were identified by the research participants as among the primary causes for debt accumulation. As discussed in Chapter 4, the public health system at Panchayat level is basic and not always available. As such, people often travel to larger urban centers to receive better medical treatment and specialized care. However, this comes with a high cost that few households are able to afford without resorting to loans. Shampa, 40-year-old, GC, for example reports the following: *“We had to take a debt of Rs. 20,000 to pay for my husband’s health problems. We needed the money to repay it [...] so my husband decided to migrate”* (Nuagan_16).

Second, dowries were mentioned during interviews and discussions as an important area of expenditure, for which many families take on debts. Dowry may be a significant economic burden depending on the family’s demographic composition. Earnings from migration are used to pay dowries upfront, thus avoiding falling into debt, or to pay off the debt already incurred, as the following two interview quotes testify: *“My husband has six sisters, he*

started to migrate nine years ago because the family needed money to marry them” (27-year-old, GC, Khaita_08). “When my sister-in-law got married we had contracted a big debt. We needed to repay it and the money my husband was earning from local daily labour was not enough hence he went to Kerala” (30-year-old, SC, Nuagan_13).

As noted before in this chapter, as well as being a driver for migration debt can also be an outcome, especially in the case of international migration.

6.6 Environmental change and mobility

The relationship between environmental change and migration is far from linear. As discussed in Chapter 2, there is growing evidence that the impacts of climate and environmental change do not act alone as drivers of migration. In the study area, environmental change was never directly associated with migration, or perceived as a driver by the respondents, even when prompted. However, the negative impacts of climate and environmental change on livelihoods and wellbeing are frequently reported and are closely related to the issues influencing mobility highlighted in section 6.4 (i.e. land ownership, employment opportunities, declining agriculture productivity, indebtedness). Supriya, 25-year-old, SC, explained why her husband went to Bangalore where he has been working for over 10 years:

My husband migrated because he could not find a regular job here. We don't have any land or livestock. My in laws' family had land but it was lost in the river. Because we don't have land anymore, every year we have to buy dry grass for the thatched roof. It is very expensive, we barely have money to buy food.
(Nuagan_02)

Supriya, as many other respondents, did not link migration to environmental changes. However, the drivers she mentioned are either directly or indirectly related to land losses and riverbank erosion (i.e. decline of agricultural productivity hence employment opportunities, loss of assets and livelihoods, dependency on purchased products). The framework of migration and climate change elaborated in the Foresight report (Chapter 2, section 2.3) suggests that in order to understand the influence of environmental change on migration patterns and decision making it is necessary to assess environmental impacts on the key drivers of migration, i.e. economic, political, social and demographic factors. As

discussed in Chapter 2, the Foresight's framework might not be able to fully explain the complexity of the environment-migration nexus, but it remains a useful tool. The information collected for this study confirms that the influence of environmental change on migration is detectable only through the impacts it has on existing drivers. Land losses, salinity intrusion and weather shocks (floods, storms, cyclones) may trigger migration by exacerbating underlying causes or worsening household living conditions. 28-year-old, OBC, Meenakshi narrates the story of migration in her family, which is illustrative of how environmental factors may indirectly influence one's decision to migrate:

My husband's family had six acres of land, they used to sell the rice and live out of agriculture until they gradually lost almost all of it in the river. There is one acre left which is barely enough to cultivate rice for subsistence. They also lost a house and relocated here [entrance of the village], my father in law sold a boat and built this house [pucca house] with that money. My husband is the only son but he had to migrate because the family was facing financial problems and could not live out of agricultural production anymore (Dakhinaveda_12).

Land losses gradually eroded Meenakshi's family assets and livelihoods to the point that migration became almost the only choice. After the interview, her father-in-law explained to me how they gradually went from being relatively well-off to being barely able to eat until his son migrated to Pune, in Maharashtra and things started to get better.

As noted in Chapter 4, land degradation and salinity intrusion are among those climate stresses perceived as most disruptive in the study area, and they are often reported by migrant households as interfering with livelihoods. In the words of Naini, 38-year-old, GC: *"He [husband] migrated because the agricultural land was flooded every year with salty water, the production was decreasing and the family needed another source of income"* (Nuagan_10).

Finally, the environment-migration relationship can be linked to debts contracted to finance climate adaptation responses. As Namita, 35-year-old, GC, whose husband is in Delhi, explains:

This area is becoming always flooded during the rainy season so we decided to build a *pucca* house. We live in a flood prone area, a *pucca* house was a priority for us. We contracted a debt of Rs. 20,000 to build it. We had to take loans from different sources, money lenders, friends, the SHGs. We are still unable to repay and to complete the construction of the house. We plan to repay the debt with the money that my husband is sending to us (Dakhinaveda_14)

It is unclear whether Namita's husband migrated before or after his family decided to build the concrete house to reduce their vulnerability to floods. It is clear, however, that their ability to repay the debt now fully depends on remittances. This enables us to conclude that there is indeed a link, although indirect, between migration and environmental change.

Environmental factors can also shape migration patterns, for example, by influencing the duration or distance of migration. 29-year-old, SC, Dhivya reports that her husband, who is already a migrant in Uttar Pradesh, is thinking of migrating abroad to earn more and be able to rebuild their house. She explains:

My husband has thought about migrating abroad. He wants to migrate internationally to earn more money for our children's education and to build a new *kutcha* house. This [she points to the house] has been damaged during the last floods. The river is getting closer and closer, the house gets flooded more often than before (Nuagan_14)

In some of the migrant households that I interviewed, as in Dhivya's case, aspirations to extend migration from internal to international were linked to the need to build *pucca* houses, as *kutcha* houses are vulnerable to increasingly damaging floods and cyclones.

Focus group discussions permitted a broader perspective on migration-environment interlinkages that go beyond single households. Even at community level the two processes were not perceived as directly related. However, when asked to recall major changes in migration patterns over time and to think whether they associated those changes to particular events, the participants often located them in time by referring to climate stresses or shocks without being prompted.

Environmental factors can also influence the decision *not* to migrate. Immobility in the context of environmental change has been prevalently understood in relationship to assets and capacities, the lack of which may restrict people's mobility. Nevertheless, socio-psychological conditions also play a role (Adams, 2016). In the village of Dhakinaveda, riverbank erosion is so significant that some houses are on the edge of the river. This situation generates concerns over migrating and leaving the family behind and may even influence the decision to return. Neha, 28-year-old, SC lives with her husband and elder parents in-law. When I asked her if her husband had ever thought about migrating considering their financial needs, she said: *"My in laws are old. We live too close to the river, he [husband] doesn't want to leave us alone"* (Dhakinaveda_19).

Sasmita, 36-year-old, GC, explained that her husband returned from Delhi because she was too scared to live alone with her son in their kutchha house on the riverbank. In her words:

My husband returned from Delhi 2 years ago, after 15 years of working there as electrician. When we separated from my in laws, I moved into this house alone with my son. It is too close to the river [...] I was even scared to go to sleep [...] if there was heavy rain in the night I didn't know what could happen! One day I called him and asked him to return (Dhakinaveda_03)

Although a shallow analysis may suggest a lack of interlinkages between migration and environmental change, qualitative insights from the case studies allow us to expose indirect links and unpack the complexity of the environment-migration nexus. Environmental issues seem to shape migration processes from pre-decision to return, influencing patterns and outcomes, by interacting with enabling or constraining factors of mobility.

6.7 Migration outcomes

Migration has multiple positive and negative effects at both household and community level. At household level, its impacts are related to the socio-economic conditions before migration and to factors such as the household structure, caste and composition. Within the household, the effects are differentiated depending on gender, age and relationship with the migrant. While an in-depth analysis of the impacts of migration on intra-household power dynamics across gender and other intersecting social identities will be provided in

Chapter 6 and 7, this section highlights key impacts at the household level that may influence adaptive capacity.

6.7.1 Overview of remittance patterns, sums and frequencies

For a majority of the households that I interviewed, remittances represent a key source of income. There is a significant difference in the amount received by the households of origin depending on the destination of migration (internal vs. international), whereas little variation is noticeable with regards to occupation of migrants or duration of migration. Data from the interviews suggest that internal migrants remit monthly, on average, Rs. 4-5,000, while international migrants send about Rs. 10-15,000. There was only one case of in-kind remittances in which the migrant was buying goods every time he returned to the village (once or twice a year) and was sending money only for ad hoc needs. As noticed by his wife, 40-year-old, OBC, *“He [husband] sends money only in emergency situations [...] When he comes back he brings clothes for the family members and he contributed to the wedding of my niece”* (Nuagan_09). Overall, despite the migrants’ jobs being described as occasional and unstable, remittances were reported as being regular. The money is usually sent through bank accounts, most frequently to the migrants’ wives account.

6.7.2 Linkages between remittances, food security, health and education

Remittances are primarily spent on food, health, loan repayment and education. Subsistence agriculture is usually sufficient to provide for rice consumption. However, households still need to buy vegetables, especially during the dry season, as well as agricultural inputs such as seeds and fertilizers. This study did not quantitatively collect data on food security and nutrition but observations and interviews revealed that households with migration were less likely to experience food insecurity. In contrast, I came across cases of food insecurity and malnutrition in households with no migrants, as described in these following quotes: *“We both [husband and wife] skip a meal. We take only two meals per day but we try to always provide three meals to our children”* (27-year-old, SC Dhakinaveda_08) or *“We manage to give some food to our children but both my husband and I have to skip meals. My father in-law went to live with his daughter because we don’t have enough food”* (33-year-old, GC, Nuagan_03).

The linkages between migration and food security have been widely researched and overall suggest a positive relationship (Choithani, 2017; FAO, 2018; Zezza et al., 2011). Beside contributing to support basic subsistence consumption, remittances are often also used to diversify diets and improve nutrition (Bryan et al., 2014; Deshingkar, 2010; Nguyen & Winters, 2011) with indirect positive effects on health. Expenditure of remittances on health was often reported, especially to access better healthcare. Meenakshi, 28-year-old, OBC says:

My daughter has a serious liver condition that the doctor in Rajnagar couldn't resolve. He referred us to Kendrapara [biggest hospital in the district] but my husband didn't want to bring my daughter to a public hospital. We went to a private hospital. We spent Rs. 7,000 for her surgery. It was all the money that my husband saved when he was in Bangalore. Now that he returned because my mother-in-law is sick we can't save anymore (Dakhinaveda_12).

Children's education emerged in the interviews and FGDs as a top priority in terms of household expenditures. Studies in Africa, Asia and Latin America suggest that in households receiving remittances, children are more likely to enrol in primary and secondary school and to continue with higher education, particularly in households with international migrants (Edwards & Ureta, 2003; Elbadawy & Roushdy, 2010; Gyimah-Brempong & Asiedu, 2015; Theoharides, 2015). In the study area, education is increasingly understood as essential to improve children's future and is often prioritized over other expenses. Riki, 27-year-old, GC stresses that education is crucial in affording non-migratory opportunities: *"I want my son to be educated. I don't want him to be forced to migrate"* (Khaita_08). Surati, 30-year-old, SC highlights that children's education is first priority for her: *"We spend the money on our children's education and if there is something left we buy things for the household"* (Khaita_09). It is important to point out here that mobility is at times considered a pathway to increase the chances of being able to stay put, through a perceived intergenerational upward social mobility, as the first of the above quotes also illustrates.

However, not every household that received remittances was similarly impacted. For example, households receiving remittances from international migration and households with more than one migrant were generally better able to save, thus invest in education. Joylin, 35, GC who lives in an extended household of six people, and whose husband is in

Dubai, said: *"I save a minimum amount of Rs. 1,000 every month for my children's education and their future"*. Her brother-in-law had recently migrated to Maharashtra. He was not sending remittances yet but was expecting to be able to do it soon (Dakhinaveda_01). Similarly, Rabani, whose husband and brother-in-law were seasonal migrants remitting a total of around Rs. 10,000 per month, reported that every month they are saving around Rs. 1-2,000 for their children's education (Khaita_14).

It is worth highlighting that migration can also have negative effects on education for children left behind, especially for adolescent girls and young women who may take over caring 'duties' and drop out of school to help carry the increased work burden caused by the departure of family members (Gatskova et al., 2017; Giannelli & Mangiavacchi, 2010; Hu, 2012). There is no particular evidence of this phenomenon in the study area, however this may also be due to the fact that traditional social norms restrict young women's access to higher education independently from availability of funds.

6.7.3 Assets accumulation: positive and negative impacts

The question of whether migration improves the life conditions and wellbeing of the households of origin over the long-term is a complex and much debated one. The outcomes of migration on poverty reduction vary depending on many factors related to household characteristics and migration typologies. Migration can start as a 'survival' strategy due to distress and gradually become part of the household diversification strategy, improving living standards (Deshingkar & Start, 2003; Housen et al., 2013). Yet, saving and accumulation do not occur for everyone and migration can also lead to patterns of dependency and risk concentration, as noticed in Chapter 2.

In the study area, savings and investments in assets and housing are prevalently made by households with more than one migrant and/or households with international migrants. Improvements in household living conditions are manifested in housing (pucca or semi-pucca), diversification of livelihoods (multiple sources of income and/or maintained ownership of agricultural land) and/or ability to save from remittances.

For example, Priyanka, 40-year-old, GC, lives in an extended family of 10 people, her husband and younger brother-in-law are in Maharashtra where they work as plumbers. Priyanka and her in laws live in a large two-floor pucca house with toilet. She says: *"My*

husband and brother-in-law have been sending money since 2010. The house was built using that money". She reported that they are usually able to save from remittances every month but she does not know how much because the savings are managed by her husband. Remittances are the main source of income but the family also lends 4 acres of land for sharecropping and owns two cows (Dakhinaveda_02).



Picture 3.. Pucca house of a household with migration (Dhakinaveda, 2016)

Even though international migration often implies the repayment of large debts, the amount remitted is generous enough to allow some form of asset accumulation, especially when households do not have to spend all the remittances on primary needs – for example, when they maintain a small agricultural production that covers food-consumption needs, or benefit from the PDS system. The indirect gains from larger remittance flows can go beyond assets accumulation and lead, in some instances, to better access to education and enhanced safety and resilience to environmental hazards.

The following is an extract from an interview with Joylin, a 35-year-old GC woman whose husband migrated to the Gulf. She explains the changes that they could afford since he moved abroad:

My husband migrated to Dubai eight years ago after spending 15 years in Delhi [...] We now have a pucca house. It took four years to build it using the money he is sending to us (Rs. 15,000 per month). Now that we repaid the loan, we are also saving around Rs. 1,000 per month for my children's education and future (Dakhinaveda_01).

Joylin stressed that having a pucca house is very important for them because their land is prone to floods and it was not safe to live in a kutcha house anymore.

While all the interviewed households with more than one migrant and/or with international migration showed better overall socio-economic conditions than households where there was only one migrant, the scale of accumulation varies depending on pre-migration conditions (i.e. land and assets ownership, migrants' employability skills etc.) and on its duration. For example, Chaadri's (23-year-old, OBC) husband and brother in law are also both working as plumbers in Maharashtra but her brother in law migrated only seven months before I interviewed her. She reported that he was still learning the job and was not paid enough to be able to send money back home (Dakhinaveda_11).

Accumulation and display of assets can help balance hierarchies of social status, such as with the few cases of SC households that were able to build pucca houses through remittances. Besides reducing vulnerability to climate shocks, owning a pucca house is a social marker in the study area. As noticed by Rao (2014b) in her study in Bangladesh, adopting the material markers of the elite can be a conscious strategy of social mobility for the poor, and a way to challenge the elite's exclusive claim over certain assets.

An inverse effect could be that of increasing inequality between migrating and non-migrating households which creates tensions, affecting social capital. Migration can increase existing inequalities and further marginalization of the poorest and most vulnerable in communities (Black et al., 2006; Deshingkar, 2006; Kothari, 2003). During the time I spent in the field, I noticed that the majority of pucca houses belonged to households with migrants, or to village money lenders. Conversations with villagers disclosed that some of the households with two or three migrants had started to lend money at high interest rates, becoming money lenders themselves. These changes in community power dynamics brought disturbances. Although it was not possible to investigate this aspect in greater

depth, it was obvious that some villagers were unhappy about the situation and showed hostility towards these families. At times this type of money lending was also reported as being unreliable because it depends on remittances. When migrants did not send money regularly, liquidity was unstable (Fieldnotes 2016). This consideration brings me to the final point of this analysis which is that of remittance dependency and vulnerability.

6.7.4 Dependency patterns of migration

If it is true that migration can lead to livelihood diversification and accumulation, it is also true that under unfavourable conditions it could push households into patterns of dependency. In most of the interviewed households, remittances have become the only source of income, raising concerns over long-term impacts, especially in households with few or no assets. Rinki, 27-year-old, GC, lives in an extended household of three adults and one child, all financially dependent on her husband who is in Bangalore. She reported:

In my family he [husband] is the only person who works and we are all depending upon the money he sends to us. We have to purchase everything, only water is free. Before we had 2 acres of land but we sold it to marry one of my sisters in law (Khaita_08)

Adidi's story (33-year-old, GC) is illustrative of how household's full dependency on remittances can even worsen pre-migration conditions when there is a sudden disruption in remittance flow:

My husband was working in Kolkata when he became sick, he has stomach problems [...] he could not work anymore and returned to the village [...] since then we are not able to have three meals per day, we never eat meat and we can't buy vegetables. We eat what comes out of the kitchen garden but sometimes it gets flooded. My children eat at school, they have lunch there. My father-in-law went to live with his daughter because we can't provide food for him anymore. When my husband was in Kolkata, he was sending Rs. 5,000 every 2-3 months, it wasn't much but it was enough for us. We could have three meals at least. Now I beg in the village because we don't even have rice, some

villagers help us [...] they know that we are in a difficult situation
(Nuagan_03).

On the day of the interview Adidi's husband was going back to Kolkata, despite his health conditions still being critical, because, as she said: *"there was no other choice"*.

6.8 Conclusions

This chapter has investigated migration patterns, dynamics and impacts, highlighting the complex intersection of social, economic and environmental conditions in the study area. As explored in section 6.3, migration is male dominated, prevalently inter-state and permanent. Interesting traits of inter-caste differentiation emerged in terms of migration patterns. In contrast to what is commonly observed in the context of India by previous studies, the findings here showed that SC engage more in long-term than seasonal migration. The latter is almost exclusively undertaken by GC households in the study area. The section highlighted that mobility patterns have changed during recent decades, with migration becoming more long-distance and long-term. International migration is still relatively rare, has a high cost, and is caste-wise predominantly undertaken by GC households. However, it appears to be on the rise, hence patterns may change in the future.

Section 6.4 analysed occupation and profiles of migrants pointing to village- and caste-differentiation and highlighting the key role of social networks in determining migrants' employment sector. It was concluded that social networks heavily influence migration patterns and are still strongly caste based. Migrants are mostly employed within informal sectors, often working under exploitative working conditions and with no access to social security.

Section 6.5 sought to unpack the drivers of migration, showing complex interrelations between social, economic and environmental factors. Conceptually, migration is usually defined either as voluntary or forced. The findings showed that people's decision to migrate involved an element of choice but was also often described as a 'forced choice' taken out of necessity and lack of acceptable alternatives. This is reminiscent of what Hugo (1996) describes as a continuum between voluntary and involuntary migration. The decision to migrate is usually taken in consultation with other household members and the section showed some interesting elements related to social norms and social roles that enable and

constrain mobility. The discussion also showed that many underlying factors, such as land ownership, changes in family structure and debts, remain invisible if conflated into a category of 'economic factors'. Elements of generational change in youth aspirations and youth disengagement with the agrarian sector also emerged as important drivers deserving further analysis and indicating increasingly dynamic migration patterns and population trends. The section observed that particular drivers may predispose migration, however they never act alone.

Section 6.6 delved into the environment-migration relationship. The discussion pointed out that migration and environmental change are never directly seen in connection by the participants. Yet, a more in-depth level of analysis allows identification of several interlinkages and a conclusion that environmental factors do play a role in shaping migration decisions, patterns and outcomes for instance, through their impact on income and livelihoods or the need to adopt expensive adaptation measures (i.e. building pucca houses). It was also found that environmental conditions can act as barriers to migration and can push migrants to return to help their families to cope with environment-related risks, especially when women remain behind alone in nuclear households.

Migration can alleviate or exacerbate risks and has multiple positive and negative impacts on households and communities. The analysis conducted in section 6.7 provided insights into the use and characteristics of remittances. Migration, through financial remittances, can contribute to enhance household food security and improve access to health and education. Even households who started from worse pre-conditions tend to have better overall conditions than those without migration. Among migrating households, significant differences emerged in terms of accumulation and dependency patterns between households with international migrants or more than one migrant, and households with only one internal migrant. The latter are less likely to accumulate assets and more likely to fully depend on migration for income generation and consumption, meaning that in the case of disruptions of remittance flows they may be pushed into poverty traps.

At the community level, migration may lead to changes in social relations and power structures and contribute to increase (pucca vs. kutchha houses; migrating households becoming money lenders) or balance (SC households with pucca houses) social inequality.

This chapter contributes to knowledge on migration in coastal Odisha and to nuanced understanding of migration patterns, drivers and outcomes. By providing an analysis of differentiated mobility that reflects various levels of social differentiation, as discussed in Chapters 4 and 5, it lays the basis for the final discussion on the adaptation-migration nexus (Chapter 8). The next analytical chapter (Chapter 7) will unpack the multiple dimensions of adaptive capacity from the lens of intersectionality.

CHAPTER 7. DIFFERENTIATED ADAPTIVE CAPACITY: INTERACTING AND SHAPING FACTORS

*“When a disaster destroys your house you still have the land.
But when your land is lost in the river,
there is nothing left to rebuild your life”
Odisha, 2016*

7.1 Introduction

This chapter examines adaptive capacity in the researched rural communities through the lens of gender and social differentiation. Adaptive capacity refers here to the dynamic set of conditions comprising the latent ability to anticipate, respond and recover from change (Adger & Vincent, 2005). Being embedded into physical, cultural and social environments, the conditions that constitute adaptive capacity are heavily shaped by identities and power relations. Still, understandings of adaptive capacity are largely homogenised and fail to account for context-specific issues of social differentiation, equity and power (Chaplin et al., 2019; Mortreux & Barnett, 2017; Ravera et al., 2016; Thompson-hall et al., 2016). As highlighted in Chapter 2, even though adaptive capacity is increasingly recognized as a dynamic and socially differentiated concept, it is still mostly portrayed as a static set of assets-based factors applicable to ‘all’ and measured through top-down structural approaches. The analysis in this chapter seeks to unpack those power-relations embedded in adaptive capacity processes, explaining the ways that people’s capacities and priorities are influenced by social and individual factors. By providing a nuanced understanding of adaptive capacity, which stems from people’s perspectives and accounts of diversity, this chapter responds to the need to adapt these macro-scale measurements of adaptive capacity into analytical tools able to grasp the complexity and diversity of local realities at community, household and intra-household level (Cohen et al., 2016; Mortreux & Barnett, 2017; Toole et al., 2016). The chapter also contributes to address gaps in empirical knowledge of adaptive capacity, which is still predominantly theory-driven (Jiao & Moinuddin, 2015).

The analysis focuses on people's own understanding of their capacities, needs and challenges to anticipate, prepare and adapt to change. As with the discussion on objective and subjective resilience (see Jones & Tanner, 2017), bottom-up perspectives of household and individual adaptive capacity can add value to theory based (objective) assessments by revealing sociocultural and cognitive factors that are otherwise overlooked. The approach taken here is grounded in the concept that adaptive capacity and adaptation are rooted in deeply diversified contexts and bounded by intersectional subjectivities, hence by an individual's social attributes (Matin et al., 2018).

The following analysis is mainly informed by data collected through FGDs. In particular, the capacities and problems ranking exercise (Chapter 3) served the purpose of identifying which elements determine or constrain adaptive capacity, discuss the underpinning factors, and identify differentiated priorities in terms of needs, challenges and desired capacities. As already observed, FGDs could not fully expose caste differentiation nor illustrate household dynamics (Chapter 3). They are therefore complemented by data from in-depth interviews and field observation. Key Informant Interviews provided further insights into macro- and meso-level contexts such as political and socio-economic contexts, that influence people's capacity, directly and indirectly. Data collection and coding have been informed by livelihoods based approaches to adaptive capacity assessments as discussed in Chapter 2 and integrated categories related to agency, social values, cognition and identities (Brown & Westaway, 2011; Cohen et al., 2016b; Kuruppu & Liverman, 2011; Mortreux & Barnett, 2017; Nelson et al., 2007). The discussion re-interprets the 'traditional' categories of livelihoods-based adaptive capacity frameworks to emphasize process-based determinants and situate the understanding of adaptive capacity in people's everyday life. The focus is therefore on local, household and intra-household level processes (Jones et al., 2019; Toole et al., 2016). The analysis encompasses both specific and generic capacities (Eakin et al., 2014).

The chapter begins by illustrating communities' perception of climate shocks and stresses and their impacts on livelihoods and wellbeing (section 7.2). People's perspective of environmental-related challenges help situate their understanding and prioritization of needs and capacities. The following analysis of adaptive capacity in the study villages (section 7.3) unwraps the components of adaptive capacity and the processes underlying differentiated determinants and barriers. Section 7.4 looks in detail at enabling factors of

adaptive capacity, explaining the way different elements interact; weakening or strengthening each other. The final section (section 7.5) summarizes key aspects of social differentiation in adaptive capacity that emerge from the discussion.

The analysis conducted in this chapter will serve as baseline for the final discussion (Chapter 8) where adaptive capacity is more closely investigated in the context of male-out migration and further linked to the broader analyses of migration dynamics (Chapter 6) and gender relations (Chapter 5) provided in earlier analytical chapters.

7.2 Communities' perception of climate shocks and stresses and their impacts on livelihoods and wellbeing

People's perception of climate change is considered a prerequisite for adaptation. Studies of farmers' perception of changes in climate and weather patterns have shown that perception has a strong influence on adaptation responses (Bryan et al., 2009; Maddison, 2007; Roncoli et al., 2002). Likewise, human cognitive factors, such as perceived adaptive capacity or self-esteem, are found to be crucial in shaping adaptation (Grothman & Patt, 2005). Migration literature also points out that environmental migration takes place in the context of 'perceived' environmental change (Martin et al., 2014). A literature-based overview of geographical characteristics and climate challenges affecting the Mahanadi delta can be found in Chapter 3. This section however seeks to focus on people's perception of climate variability and of the impact environmental factors have on their lives and livelihoods. A bottom-up view helps outline the context in which the research communities situate their understandings of needs and priorities for adaptive capacity. It also partially answers the very important question of 'to what are people adapting?', trying to understand the hazards (or stresses) to which the respondents feel they need to strengthen their adaptive capacity, and why. The following discussion covers people's perception of these hazards, their impacts and the perceived effectiveness of current responses.



Picture 4. Vulnerability matrix PRA showing men identifying and assessing climate impacts on livelihoods

People’s perception is influenced by multiple factors related to interests, values, social roles, knowledge and expectations (Grothman & Patt, 2005). Present and past experiences also contribute to shape the way people feel about their environment and how they perceive change. Thus, even in the same context, perception can vary greatly. The PRA exercises and FGDs that were conducted in all three villages (Chapter 3) highlighted some common traits, despite geographical and social diversity.

7.2.1 Erratic rainfall and changes in agricultural seasons

Taking the example of Khaita, Table 9 summarizes men’s and women’s perception of seasonal climatic changes and consequent adjustments in their agricultural practices (FGD21-K-M; FGD22-K-W). The perception among men and women was shown to be very similar and points toward a reduction in the number of seasons (shrunken from six to three) and changes in the duration and onset of the rainy season – a shorter rainy season and shift in onset from June to late July/August. Men and women participants reported long rain gaps during the monsoon season, observing that rain has become more abundant but less frequent, and described these changes as causing ‘big damages’ to agricultural activities and ‘affecting’ production. As reported by a male participant: *“Compared to 10 years ago there is a longer rain gap. It is a damage for agriculture and for us. We are all farmers. We didn’t have these problems before”* (FGD13-K-M). The perceived increase in irregularity of rainfall

patterns was confirmed by a key informant from the Odisha Meteorological Department who explained that during the monsoon season it is becoming more frequent to have 20-25 days without rain followed by a month's worth of rain in just five days (KII01-M)

Table 3. Perception of climatic variability and changes in agricultural seasons in Kaitha

Legend: (-) reduction; (+) increase; --- no change observed; Source: Author's elaboration from the seasonal calendar and vulnerability matrix exercises with men and women.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Seasons												
Before (6)	Winter		Spring	Summer		Rainy season			Autumn	Winter		
Now (3)	Winter		Summer				Rainy season			Winter		
Agricultural activities for each season												
Paddy crop	Harvesting		Lean season			Seeding	Fertilising	Lean season		Harvesting		
Vegetable gardens							Seeding and harvesting					
Perception of changes in climate and weather events												
	Winter		Summer			Rainy season			Winter			
Cyclones	---		----			(-)			(+)			
Soil erosion						(+)						
Salinity intrusion	(+)		(+)			(+)			(+)			
Floods	----		-----						(+)			
Irregular rainfall	----		----			(+)			(+)			
Temperature	(-)		(+)			More humidity			More humidity			

Source: Author's elaboration

These changes in rainfall patterns affect traditional agriculture seasonality. For instance, as shown by the red boxes in Table 9, the lean season has become longer, and people have less time for seeding and fertilising. Moreover, unpredictability of rain makes it difficult for farmers to understand when to start seeding. Men farmers reported that heavy rain after seeding or during fertilising causes total crop losses as seeds and fertiliser are washed out (FGD21-K-M). Women observed negative impacts of irregular rainfall on vegetable gardens⁵¹ – for which they are usually primarily responsible – and described the implications that this has on income and food security (FGD22-K-F). Due to scarce production, households are also compelled to buy vegetables in the market during the monsoon season, whereas normally

⁵¹ Vegetable gardens or kitchen gardens refer to a domestic area, a small garden, where vegetables and herbs are grown for self-consumption.

they would do that only in the dry season. The sharp increase in demand causes the price of vegetables to rise significantly at this time of the year putting a strain on households' annual expenditures.

7.2.2 Extreme weather events: perceived changes and impacts

Tropical cyclones, storm surges and flooding are common extreme weather events in the delta. In all three villages, the frequency of these events is perceived as having increased in recent decades. Scientific studies observed the same trend (see Ghosh et al., 2019), with some predicting an increase in the occurrence of cyclones, especially during the late monsoon season (Unnikrishnan et al., 2011). The latter was also noticed during the men and women FGDs in Khaita who reported an unusual incidence of cyclones and storm surges between September and November (Table 8). Cyclones, flooding and storm surges have acute impacts on agriculture and infrastructure. Mud houses (*kutchha*) are often damaged during cyclones. The extent of the damage varies depending on the strength of the event as well as the location of the house. During the fieldwork I observed that SC households (mostly living in mud houses) are usually clustered in the most vulnerable areas of the villages (Fieldnotes 2016), partly due to their landless status. They were mainly close to the embankment, the riverbank or on low lying land, thus tended to be the most affected by weather extremes.



Picture 5. Scheduled Caste *kutchha* houses in low-lying land next to the bank of the river Hansua in Dakhinaveda

Cyclones are said to bring ‘destruction’, ‘financial crisis’ (because of crop losses), ‘food insecurity’ and ‘tension’ in the household, but they are overall perceived by both men and women as having less impact on livelihoods than climate stresses such as soil erosion or salinity intrusion (FGD19-K-M; FGD11-D-W). This perception could be explained in at least two ways. First, unlike the climate stresses whose impacts are felt constantly, cyclones are one-off events. The latest major tropical cyclone that hit the study area (cyclone Phailin) occurred three years before the fieldwork. Its memory was therefore less vivid than events occurring more frequently and recently. Second, the participants might be more prepared overall to cope with cyclones than with other hazards, which might influence their risk perception (Grothman & Patt, 2005).

Floods are recurrent events in the inland villages of Dakhinaveda and Nuagan mainly because of their position close to the riverbank (see Chapter 3). Severe floods are reported as happening every year, often twice (or more) a year. In Nuagan, people said that over the last decade, water logging also started to occur during the dry season – brought by ‘high tides’ and ‘strong wind’ – and to last longer; up to five days (FGD15-N-M; FGD18-N-W). Floods are judged as having a relatively low impact on infrastructure, but as severely affecting agriculture. Men pointed out that because the water from the river has become more saline, inundations now destroy agricultural production (FGD14-D-M). Later in this chapter, it is noted by women that floods and waterlogging also affect access to and quality of water (section 7.3.3.1). Unlike cyclones, floods are not always predicted or announced by early warnings. However, before the rainy season, villagers reported preparing the dry food and equipment necessary to evacuate in case it is needed.

Table 10 is an extract of the historical timeline exercise conducted with men in Khaita, which shows the key climate hazards affecting their village over the last 45-50 years, the impacts of these hazards according to participants’ memory and perception, as well as further insights into adaptation responses and participants’ interpretations as to why similar types of events produced different impacts.

Table 4. Historical timeline of climate hazards and their impact (FGD23-K-M)

Year	Hazard	Impact (perceived)	Comments
1960	Flood	<ul style="list-style-type: none"> ▪ Livestock and crop losses ▪ 70 Houses damaged ▪ Diseases ▪ Sadness, family tension 	"In normal times, there is not much cohesion but cyclones/floods bring more solidarity"
1971	Cyclone	<ul style="list-style-type: none"> ▪ 600 deaths ▪ 100 livestock losses ▪ Fields damaged, total loss ▪ Food scarcity ▪ Houses damaged ▪ School damaged ▪ Water scarcity (used to walk 5km to collect drinking water) ▪ The forest was destroyed 	<p>There was no embankment or cyclone shelter at the time.</p> <p>"People evacuated to Rajnagar but there wasn't a road at the time, they reached it by foot [12km]. The road was only constructed 10 years ago. They stayed for 5 days in a school in Rajnagar, the government was providing dry food."</p> <p>"Migration started after this cyclone. Everything was lost and the first 4-5 people migrated after that"</p> <p>"The cyclone destroyed the forest from which we used to collect wood to build the houses. Since then we started to use bamboo and now the houses are more resistant"</p>
1982	Cyclone	<ul style="list-style-type: none"> ▪ 6 deaths ▪ 200 livestock losses ▪ 150 houses damaged ▪ Crop losses ▪ Food scarcity ▪ School damaged 	
1999	Cyclone	<ul style="list-style-type: none"> ▪ 1 Human death ▪ Fields damaged, total crop losses ▪ Food scarcity ▪ Breaches in the embankment ▪ Houses damaged 	<p>"Some people reached the shelter but there wasn't sufficient capacity for all of us so other went to relatives outside the village"</p> <p>"Thanks to the shelter there are less deaths"</p> <p>"The Red Cross sent the alarm, some already had mobile phones and received a call. The Red Cross also helped to evacuate pregnant women and children"</p>
2008	Cyclone	<ul style="list-style-type: none"> ▪ House damaged ▪ Crop losses 	"Some stayed in the shelter for 2 days, others went to relatives outside the village".
2011	Drought	<ul style="list-style-type: none"> ▪ Crop losses ▪ Food scarcity ▪ Water scarcity 	
2013	Cyclone - Phailin	<ul style="list-style-type: none"> ▪ House damaged ▪ Fields damaged – total crop losses 	"Some people already had concrete houses and they took shelter there"
2014	Cyclone Hud-Hud	<ul style="list-style-type: none"> ▪ Crop losses ▪ Small damages in some kutcha houses 	"The wind was not as strong as with the other cyclones but we had major problems with saline water in the fields"

Source: Author's elaboration of Historical Timeline PRA with men (FGD23-K-M).⁵²

7.2.3 Soil erosion and salinity intrusion: extensive impacts, low capacity

The majority of planned climate adaptation measures in Odisha and the Mahanadi delta focus on extreme weather events, notably floods, cyclones and storm surges (see GoO,

⁵² The same exercise was conducted with women, but it did not reveal detailed information. A possible explanation is that women's historical knowledge of the village is relatively limited since they normally reach it only after marriage and leave it at marital age.

2018). It has emerged from previous discussion, and is confirmed by scientific studies, that the risk related to climatic extremes remains very high, especially in the northern part of the Delta and specifically in the study area of Kendrapara (Ghosh et al., 2019). However, in all three villages the emphasis of the FGDs was not on extreme events, but on salinity intrusion and soil and coastal erosion. As noted by a focus group participant: *“Cyclones and floods don’t happen all the time. We always face salinity intrusion. It makes us lose everything. We depend on agriculture. Do you know if there is a solution?”* (FGD08-D-M). The excerpt also highlights that people perceive having very little capacity to overcome these climate stresses compared to their capacity to cope with cyclones and floods. When asked about risk perception, some reported that they were ‘used to cyclones and floods’ and were generally prepared to ‘deal’ with them. For example, in a men FGD one said: *“[...] nowadays we are more prepared. There is more awareness. If a cyclone is approaching, we hear the information on TV. 70% households have a TV and they spread the voice to the rest of the village”* (FGD07-K-M).

In contrast, when discussing salinity intrusion and soil erosion, participants in all villages reported being ‘hopeless’ and ‘unable to find a solution’. Especially in the inland villages, significant soil erosion has caused massive land losses. The remaining agricultural fields are so close to the river that their soil has become very saline. The river embankment is either broken or absent. Because of its drastic impact on agricultural production, salinity intrusion is perceived by both men and women, as an enormous problem.

Besides its implications for salinity intrusion, soil erosion has caused asset losses, especially in Nuagan and Dakhinaveda. In these villages, several people reported losing houses and hectares of agricultural land to the river. One male elder said: *“in the last decades the distance between the villages [Dakhinaveda and Nuagan] and the distance to the Bay of Bengal has reduced”* (FGD25-D-M). Respondents in the same focus group said that riverbank erosion started around 40 years ago and accelerated ever since. They cannot explain the reason for the acceleration but they said it worsened with floods. Evidence of the devastating impact that erosion can have on people’s lives, including pushing households into cycles of poverty, is illustrated later in this thesis through some of the respondents’ stories. In the words of a man that I met during a walk in Dhakinaveda: *“When a disaster destroys your house you still have the land. But when your land is lost in the river, you have nothing left to rebuild your life”* (Fieldnotes 2016). His finger was pointing to the area in the

river where his house and his agricultural land were once standing. He rebuilt his house on the other side of the village on government land, leaving him and his family with no ownership rights. As will be explained later, land is a critical factor influencing identity, livelihoods and access to credit.

7.3 Men's and women's adaptive capacity in the Mahanadi Delta

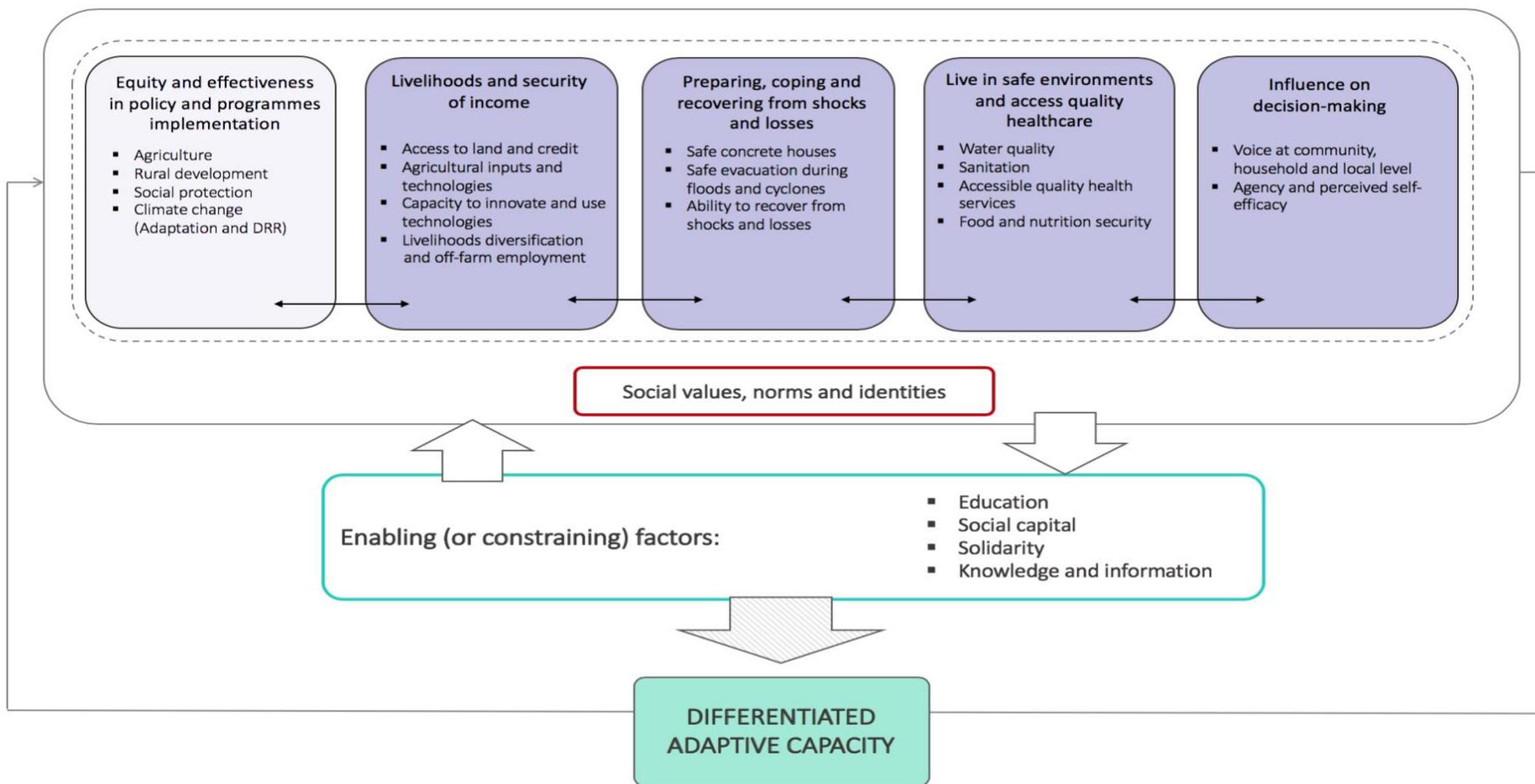
This section analyses differentiated adaptive capacity in the Mahanadi delta. The framework that guides the analysis (Figure 21) draws on adaptation literature pointing to the need for frameworks that fully integrate the cultural and social dimensions of adaptive capacity (Kuruppu, 2009; Mortreux & Barnett, 2017; White & Ellison, 2007b) and that bring attention to household, intra-household and individual level dynamics where social differentiation is mostly manifested (Jones & Tanner, 2017; Rao, 2019; Toole et al., 2016). The framework proposed here embraces these concepts and focuses on local adaptive capacity emphasizing household and individual capacity. The identified categories originate from the research participants' perspectives and understandings of the value and importance of factors and actions that determine their capacity to adapt to change.

The five boxes represent the key interdependent components of adaptive capacity, notably: i) equity and effectiveness in policy and programme implementation; ii) livelihoods and security of income; iii) capacity to prepare, respond and recover from shocks and losses; iv) living in safe environments and with access to quality healthcare; and v) influence in decision-making. The five categories are interrelated, with each of them comprising a set of determinants. The interaction among factors, within and across categories, is continuously shaped by social norms and identities, which differentiate household's and individual's prioritization and access to the various determinants. The components of adaptive capacity are situated within social and cultural structures. Despite focussing on the household and individual level, the framework also includes governance, which emerged as essential for adaptive capacity. Because governance takes place at a different scale than the other categories, it is presented in a lighter colour tone. The middle box illustrates enabling factors that act across social differentiation to strengthen (or weaken, if absent) adaptive capacity processes. In traditional livelihoods-based frameworks these factors would typically be clustered within capitals (i.e. education would fall within human capital), however this study finds them to be crosscutting and to play specific roles in influencing interactions between the determinants in the five boxes. The arrows indicate a reciprocal relationship between

enabling, constraining and determining factors. Differentiated adaptive capacity that results from these complex interactions is embedded into a feedback loop to show that the processes are dynamic and mutually shaping. Adaptive capacity is in fact intended in this study as a process rather than an outcome.

The following discussion will unwrap the key components of the framework. It is worth mentioning that the analysis of governance – equity and effectiveness in policy and programme implementation – is done from the standpoint of its effects on household and individual-level determinants, hence it cuts across categories.

Figure 21. Household and individual determinants of differentiated adaptive capacity in the study area



Source: Author's elaboration

7.3.1 Livelihoods and security of income

Maintaining and improving livelihoods opportunities emerged as an issue of great concern in all the study sites, for both men and women FGDs. People often made reference to the need to 'strengthen' their livelihoods, making them 'more resilient' to shocks and stresses and 'more stable' (FGD07-K-M; FGD10-K-W; FGD08-D-M). Agricultural production and productivity have been sharply decreasing in the area over the last decades, gradually turning agriculture from a profitable income generating activity into subsistence farming. Many households have since sought farm and off-farm employment to secure cash-income. Still, agriculture remains of high importance for household food security, and a strong trait in culture and identity. Some participants said that agriculture is what they 'live for' and that their life depends on it (FGD07-K-M; FGD14-D-M). This social and cultural context helps to explain why both men and women place a high priority on agriculture and livelihoods in their assessment of needs and capacities. In fact, as was highlighted previously, prioritization is influenced by what people consider worth being and doing - an overlooked aspect of adaptive capacity that this study aims to capture.

In the study sites, barriers and requisites for sustainable livelihoods and secure income include: i) access to land and land ownership; ii) access to formal credit; iii) access to inputs and technologies; iv) capacity to learn new skills and use technologies; and v) diversified livelihoods opportunities, including off-farm employment.

7.3.1.1 Access to land and credit

Land tenure and access to formal credit are closely entangled and often self-reinforcing factors. This section highlights key patterns of interaction between these two factors and frames them within the context of adaptive capacity. Credit is reported by men and women participants in all villages as a crucial determinant in their capacity to adapt to change. Access to finance is pivotal to maintain and strengthen livelihoods – through productive investments in inputs and technology for example – and to recover from livelihood losses, thus overcome financial crises. 'Borrowing money' is among the most cited coping strategies; being it in the aftermath of a bad agricultural season, an extreme weather event, or as an attempt to diversify sources of income (e.g. to cover the cost of migration or start a new livelihood activity).

In the study area, access to formal financial services is generally low. People fall back on informal credit solutions such as village moneylenders that apply high interest rates and are often unreliable.

Lack of collateral and financial illiteracy emerge among the main barriers to formal credit. Lack of repayments flexibility was also mentioned by some participants. In the words of a male farmer:

The bank is good because it applies low interest rates, but the application is too difficult. We don't understand the procedure. Money lenders don't ask for so many procedures or guarantees [...] I only own 1ha of land. That is not enough to guarantee for a loan (FGD27-K-M).

Land ownership and land-size are therefore critical in obtaining credit from formal financial mechanisms. Credit could, at the same time, be used to acquire more land and improve income in a self-reinforcing feedback. Land ownership usually mirrors caste hierarchies. SC households are generally landless, creating an inbuilt disadvantage in accessing formal credit which is exacerbated by other forms of social and economic discrimination (Karthick & Madheswaran, 2018; Khrisna et al., 2019; Kumar & Venkatachalam, 2019).

It is not only caste but also gender that influences access to land and resources. The patrilineal system of inheritance and land management that predominates in India makes it difficult for women to own assets, especially land (Agarwal, 1994, 2002; Rao, 2005). Despite India witnessing advancements in policies over recent decades towards gender equality in entitlements and property⁵³, implementation is still heavily constrained by gender discriminatory norms and customary laws (Deininger et al., 2010; Roy, 2015). Land is not only an essential aspect of agricultural production, income and credit, but it is also a key marker of social status and identity that, in turn, influence power relationships (within the households and in the community), social capital and agency – also determinants of adaptive capacity.

⁵³ In India, laws governing land properties and inheritance differ by religion. The Hindu Succession Act (HSA) 1956, that covers the majority of the population, was amended in 2005 to grant daughters and sons equal inheritance rights in joint family property. Prior to the amendment daughters had no direct rights *by birth* to joint family property. HSA does not recognise wives and widows as coparceners of the joint property.

It is not only private landholding that impacts livelihoods. Access to common property is similarly important. Despite men prevalently focussing on agricultural and homestead land during FGDs, women pointed to a decline in grazing land caused by soil erosion as an issue affecting their ability to graze livestock. In a FGD with women, one reported: *“There are less and less grazing fields. Now, we have to walk long distances to graze the livestock [...] it is not possible to collect grass nearby because of the high tides”* (FGD18-N-W). Except in a few cases, livestock is mainly maintained to provide dairy products, which are essential for nutrition and household food security.

Lack of access to forest land, following the 1980 Forest Conservation Act⁵⁴, was also mentioned in FGDs with women (FGD13-K-W) as a constraining factor impeding collection of firewood for cooking. Rice straws and cow dung are used as a replacement, but the poorest households that do not have livestock or cultivate land are forced to buy fuel for cooking.

7.3.1.2 Agricultural inputs and technology

Access to agriculture technology and stress-tolerant and quality seed varieties are cited by men and women as top priorities to adapt to climate stresses and strengthen their livelihood resilience. Despite several agricultural programmes launched by the Government of Odisha aiming at enhancing sustainable agriculture and farmers’ empowerment (see GoO, 2015), access to subsidised inputs, technology and extension services was low or non-existent in all three communities at the time of the fieldwork. Interviews with experts and government officials, as well as evidence at community level, pointed to disjuncture between the schemes and their implementation due to information gaps and malfunctioning extension systems.

Under the ‘National Mission on Agricultural Extension and Technology’ (NMAET) scheme, the agricultural extension system at Block level is responsible for improving farmers’ access

⁵⁴ The Forest Conservation Act was enacted in 1980. The mangrove forests in the Mahanadi delta are also protected by other legislative measures aimed at preserving one of the most biodiverse environments in the country. The Bhitarkanika sanctuary, that covers the whole Rajnagar block, was declared a National Park in 1998 by the Forest and Environment Department of Odisha. The communities that live inside this area, including the study villages, are not allowed to fish or collect any products from the forest.

to agricultural technologies, distributing subsidised farming inputs and providing trainings.⁵⁵ The scheme also establishes the presence of a 'Farmer Friend'(FF) to facilitate links between extension services and farmers at village level. The Farmer Friend (one every two villages) is expected to visit the communities every week to gather information about farmers' needs and connect them to the relevant extension officers. The effective implementation of NMAET in the study area has proved to be scarce. The majority of people interviewed or taking part in FGDs did not know about FF. Some participants were not even aware that an extension service office was present in Rajnagar (Block level). Very few reported having seen the Farmer Friend, and then only once or twice over a period of years. A conversation with an agricultural officer in Rajnagar in 2015 revealed that the farmers receive subsidized seeds only if they make a request and collect them from the office (KII12-M), however most farmers are unaware of this. A researcher at the Odisha University of Agriculture and Technology (OUAT) cited the existence of salt-tolerant seed varieties, whose distribution to farmers should be facilitated by the agricultural extension system (KII03-M). Yet, in the study area, knowledge about stress-tolerant seeds and their use is very limited.

Because some schemes only target landowners, sharecroppers emerge as particularly marginalised among men farmers. A male focus group participant said: *"Only the members of the agricultural society, who are landowners, can receive fertiliser and seeds from the government. They are less than 10 here, some of them don't even live in the village"* (FGD19-K-M). Access to extension services clearly differs among farmers and social groups depending on access to resources (i.e. land, capital), norms, education and social capital (i.e. diffusion of technologies within social networks). SC farmers, for instance, are predominantly landless, less educated and often disadvantaged by social barriers.

Differential access to extension services and technology can exacerbate inter-caste inequality and the degree to which vulnerable groups are marginalized. It is therefore important to account for inter-caste heterogeneity and the social dimensions determining access to means of production and technology (Khrisna et al., 2019). It is not only caste, but also gender that differentiates access. Although national agricultural schemes have special provisions for women farmers (see Gol, 2016), in the research area women have very limited

⁵⁵ The National Mission on Agricultural Extension and Technology (NMAET) launched in 2014 aims to strengthen agricultural extension services in order to improve agronomic practices of small and marginal farmers through information dissemination, access to new technologies, distribution of quality seeds and capacity building.

knowledge of the extension system and reported having never received agricultural inputs or trainings. In the study villages, women do not engage in paddy rice cultivation activities but they are responsible for kitchen gardens, whose contribution to household diet and nutritional well-being is well documented (Galhena et al., 2013). They reported receiving seeds from men and expressed a willingness to learn about better quality inputs and new practices to improve vegetable production (FGD10-K-W; FGD11-D-W). Women have different needs in terms of agricultural inputs and technologies, which require tailored support. However, a key informant from the agriculture department in Rajnagar says: *“even if women have land, they are not accepted as farmers”* (KII08-M).

7.3.1.3 Capacity to innovate and use technologies

Access to technology without the training and capacity to use it effectively and productively is known to be a critical barrier to innovation and adaptation. FGD participants, especially men, identified vocational and agricultural trainings as priority determinants of their capacity to adapt and improve their livelihoods.

While innovation and access to technology are included in many frameworks of adaptive capacity, the capacity to innovate is an element that tends to be overlooked or is rarely fully discussed. Innovation goes far beyond accessing technology and encompasses enabling social, political and economic environments (i.e. markets, financial instruments, advisory services, conducive policies) as well as individual skills and capacities (FAO, 2014). Moreover, making technology accessible without providing mentoring, support and trainings could potentially increase vulnerability and have an adverse effect on adaptive capacity by weakening other determinants. An illustrative case is that of a young male focus group participant in Nuagan who, to diversify his livelihoods, took a loan to start an aquaculture business without possessing any technical knowledge or skills. He was also not receiving any support from the extension system. In his words:

We would like to be trained to be able to use new technologies. For example, I started a prawn cultivation and I invested 6 Lakhs. I borrowed money from the bank and from money lenders to buy the machineries. They are very expensive and of the newest generation but I didn't know how to use them. All the prawns

died [...] now I don't have money to restart the cultivation and I have a large debt. I'm thinking about migrating to repay the debt. (FGD09-N-M)

A similar misuse of technology was observed in the use of chemical and synthetic fertiliser. Male farmers in all villages reported having never received trainings or support from the agricultural extension services on the use of pesticides and explained to use it in the same way they used the organic fertiliser (FGD19-K-M). Besides further contributing to land degradation and affecting productivity (higher cost of inputs), the improper use of fertiliser was related to health issues. Both men and women are directly exposed to high concentrations of fertiliser in the crop-paddies where men work most of the day and in the ponds - usually located next to the agricultural fields - where women spend a long time washing clothes and cooking utensils (Fieldnotes 2016). Indirect effects can be seen in the food chain and food quality as it was observed by one elder participant: *"10 years ago we didn't use all this fertiliser, the crop quality was better. Now we are eating poison"* (FGD19-K-M).

Although in the study area fishing is only for self-consumption, it is key to maintaining a nutritious diet, especially as many households cannot afford to buy other protein sources. In one of the male FGDs, a participant reported that the fish quantity has declined since people started using pesticides: *"There is a decline in fish quantity and variety. The local fish is dying because of the increasing use of fertiliser"* (FGD19-K-M). The excerpt shows that a lack of knowledge and skills around the correct use of technologies can have adverse effects, not only on livelihoods, health and income but also on the environment, potentially leading to increased vulnerability in the long-term. As another male FGD participant said: *"Trainings can help us to improve or adjust our [agricultural] practices"* (FGD07-K-M). Agricultural trainings and knowledge were identified as key determinants in all villages for improved livelihoods and income.

7.3.1.4 Livelihoods diversification and off-farm employment

Considering the decreasing profitability of agriculture, livelihoods diversification through off-farm employment is a top priority, especially for men. Male FGDs participants pointed to the need for vocational trainings as means to become 'qualified wage labourers' and improve employability. One focus group participant observed: *"If we received trainings, we*

could find a job more easily and we didn't need to migrate" (FGD09-N-M). It is worth mentioning here that skills and qualifications can also improve access to better jobs for migrants, enhancing migration's benefit as adaptation strategy (Chapter 6). Although women's access to paid work is limited by social norms (Chapter 5), they also mention tailoring and candle making as activities that they would like to learn if trainings were available in the village (FGD11-D-W).

Discussions about off-farm employment and livelihood diversification often made reference to the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGs), the Indian public employment programme designed to provide 100 days of employment to adult household members in a financial year. The primary objective of the scheme is to enhance income earning capacities while strengthening food security and providing alternatives to rural-out migration. It is not the aim of this study to fully investigate the impacts of MGNREGs, however it is interesting to highlight some implementation issues that emerged from the fieldwork and that limit the potential benefits of the scheme. As has been observed in other studies (Hussain, 2017; Kareemulla et al., 2009), participants reported that the number of days offered in a year is on average much lower than 100 days per household, making it insufficient to secure minimum income (FGD07-K-M). Participants and key informants observed that, although many people receive job cards there is not enough work for everyone (FGD09-N-M; KII02-M).

Other limits to the efficiency of MGNREGA that were mentioned by the participants include payment modalities - bank payments were reported as a constraint - and low wage rates.⁵⁶ MGNREGA wages were cited as lower than the average minimum wage in the area. This problem stems from the way that wages for unskilled manual work are fixed at national level but vary greatly across States (Sankaran, 2011). On low wages, one man reported: *"if MGNREGs could provide Rs. 200-300 /day for at least 15 days, we wouldn't need to migrate"* (FGD23-K-M).

A final, yet very important, aspect of MGNREGs that emerged from the fieldwork is the significant gender disparities in terms of direct beneficiaries. In the study sites, women did not participate in the scheme at the time of the fieldwork. It remains unclear as to whether

⁵⁶ In 2008, in response to corruption by intermediaries, the Government of India changed the payment system of MGNREGA from cash to bank payments. However, few people in rural areas own a bank account.

they owned a job card, but if so, it was evident that they were not using it. In principle, the scheme is gender-neutral, allowing access to both men and women, however female participation has notable inter-state and inter-caste variations and it is constrained by norms around mobility, paid work and household responsibilities (Bhattacharyya & Vauqueline, 2013; Narayanan, 2008).

7.3.2 Preparing, coping and recovering from shocks and losses

The research area is affected by multiple climate stresses and shocks, leading to recurrent livelihoods and assets losses (see Chapter 4). This section seeks to focus on preparation, coping and recovering from these shocks and losses.

People's ability to secure their lives in the face of climate extremes has improved in recent decades, however livelihoods losses and housing damages are still very frequent and affect household's financial stability and food security. The fieldwork highlighted flaws in the supporting system which should help people to prepare and recover from shocks, some of which are characterized by inter-caste and gender inequality. The factors that emerge as critical in building or strengthening this dimension of adaptive capacity are: i) safe housing and infrastructure; ii) safe evacuation during floods and cyclones; and iii) ability to recover from losses.

7.3.2.1 Safe houses and infrastructures

Living in concrete (pucca) houses is given top priority by men and women in all three villages with regards to safety in the face of storm surges, cyclones and flood. As will be discussed in Chapter 5, building a pucca house is one the primary investments made with remittances in migrant sending households. This is particularly evident in flood-prone villages that do not have a multi-purpose cyclone shelter. When I asked Yati, age 48, a GC, about her wishes in life, a pucca house was at the top of her list, before children's education and economic stability. She said: *"This village is affected by floods. We already lost two houses. One went into the river and another one was damaged by floods"* (Dakhinaveda_04). A male focus group participant reported constantly 'dream[ing]' of having enough money to build a concrete house for his family 'to feel safe' (FGD23-K-M). Safe housing is essential for healthy living and human wellbeing. The benefits of pucca houses have been described by men and women as going beyond protection from climate shocks to include aspects related to health and hygiene. Pucca houses are easier to maintain, clean, and as noticed by a woman: *"the*

dung that is used for the maintenance of the walls [of kutcha houses] is kept outside the house causing diseases and infections” (FGD16-K-W). They also help reduce women’s work burden (FGD16-K-W). The mud walls of kutcha houses are repaired and maintained daily by women who coat them with a mix of mud and cow dung; a time consuming activity (FGD30-K-W).

Access to good housing is still very limited in the research area. The barriers to the construction of pucca houses emerged as being related to land and financial resources but also misinformation, episodes of corruption, and lack of transparency in the selection of beneficiaries under the Indira Awaas Yojana (IAY) housing scheme.⁵⁷ People in the study villages were overall aware of the IAY, but some information gaps emerged. Participants were unaware, for example, that the IAY scheme promises provision of homestead land or land certificates to landless households (Gol, 2018). Zaaei 28-year-old, SC, said: *“We don’t even think about building a pucca house because this is not our land, we are landless”* (Dakhinaveda_19). Zaaei believed that because her family did not have any land, they did not meet the requirements to apply to the housing scheme. Lack of awareness about rights, entitlements and provisions is a recurrent issue – especially among the most marginalized and uneducated – that often amplifies social exclusion.

Regarding selection of beneficiaries, women in a FGD in Nuagan reported that the whole village was omitted by the Socio-Economic and Caste Census (SECC) 2011, therefore excluded from the IAY lists (FGD12-N-W). But even those who were included in the lists are not guaranteed to receive the grant. One male focus group participant observed: *“Some of us are in the list but when we go to the Panchayat to ask about the grant, they tell us if you give us a share we give you the money otherwise we don’t”* (FGD09-N-M). Access to these schemes is limited by bribing and corruption and amplified by other factors such as low levels of education and information. In Khaita, a woman said:

The housing scheme provides Rs. 20,000 but the middleman wants at least Rs. 5,000 to release the grant. Not all the money provided by the scheme can be

⁵⁷The scheme, renamed Pradhan Mantri Gramin Awaas Yojana (PMAY-G) in 2016, is a programme of the Ministry of Rural Development launched to provide houses to below poverty line (BPL) families in rural areas. Initially addressing only SC and ST families, and families of bonded labour, it was then extended to all families in the BPL category (Ananth, 2017). From 2016, the criteria for beneficiaries’ selection are based on the Socio-Economic and caste Census (SECC) 2001. The lists should be verified by the Gram Sabha.

used for the house, there are bribes to be paid to the officials and the middleman (FGD30-K-W)

In all the study villages, those participants who benefitted from the housing scheme said to have received around Rs. 20,000 which they claim to be insufficient to build a quality house. It is worth noting that, according to the policy, the grant provided should actually be more than two times the amount reported by the participants (Gol, 2018).⁵⁸ Some households started to build pucca houses but had to stop because they could not supplement the IAY grant. In a men FGD, one said: *“The money given by the government is not sufficient to build a good and trustable concrete house. We need to add money to construct a good quality house that we can trust and live in”* (FGD07-K-M). During my stay in the field I noticed that those who could only build one-room used it to shelter livestock and as food storage while *de facto* continuing to live in kutcha houses (Fieldnotes 2016).

Whilst housing emerged as a very important aspect for adaptation, large infrastructures such as the embankment were equally valued as a top priority for adaptive capacity. This was especially the case in the coastal village of Khaita where the embankment is considered crucial to ‘save lives’ and to mitigate the effects of inundation, wind and salinity intrusion (FGD07-K-M; FGD10-K-W). During a FGD with men, one participant highlighted: *“The embankment is more important than the cyclone shelter because it stops overflowing from the sea and reduces salinity in the fields”* (FGD29-K-M). In another FGD, a woman observed: *“Don’t compare the embankment with anything else, that [embankment] protects crops and our lives”* (FGD30-K-W). In the inland villages of Nuagan and Dakhinaveda the embankment was rarely mentioned as a factor influencing adaptation, even when I asked probing questions. A possible reason could be the fact that people living in inland villages do not directly witness the benefits of the embankment which may be less apparent in their eyes. In Kendrapara though, Disaster Risk Reduction (DRR) planning has predominantly focused on coastal embankments, this is because coastal areas are the most exposed to the force of cyclones (KII06-M).

⁵⁸ In 2016, the grant was raised from Rs. 70,000 to Rs. 1.20 lakh.

7.3.2.2 Safe evacuation during floods and cyclones

Considering the high exposure and sensitivity of the study area to climate hazards, the ability to safely evacuate and find shelter is unsurprisingly reported as critical to adaptive capacity. The factors that prominently emerged as influencing this capacity include early warnings (access and understanding of information); evacuation, safety and rescue trainings; and the presence of a cyclone and/or flood shelter. Significant differences in the level of capacity to find a safe shelter are observed across social categories depending, above all, on intersections of gender, age, caste and marital status. Differences were also observed among the study villages that receive unequal levels of governmental and non-governmental support.

Early warning systems

People's access to early warning information was shown to be good overall. In recent years, the government started to distribute sim cards to households in risk-prone areas as part of their disaster risk reduction strategy. Warnings are disseminated through SMS or voice messages in Oriya language to SIM users (KII01-M). During the fieldwork, in the month of November 2016, a cyclonic storm was moving towards Kendrapara and the early warning system went off. I was conducting interviews in Nuagan when people started to receive warning SMS and voice messages on their mobile phones. It was a good opportunity for me to observe in real life how people reacted to the warning and prepared for a possible evacuation. Some people already knew about the cyclone from the television and had started to disseminate information in the community the night before the warning⁵⁹. Although the sim cards for the early warning are given to the head of the household (FGD09-N-M) – men in most cases – access to early warnings does not seem to be characterized by significant gender and caste difference. The communities widely disseminate the information, also helped by a growing number of digital communication channels (Fieldnotes 2015-2016).

Evacuation during disasters

Evacuation, however, is a different story. Profound inter-caste, gender and inter-village differences emerged from the fieldwork. After the devastating effects of the super-cyclone

⁵⁹ An increasing number of households in each village own a television, especially newly married couple. It is in fact one of the assets that has started to be frequently asked as part of the dowry. The use of television is also possible thanks to better access to electricity in rural areas.

1999, a series of community capacity building activities on evacuation and rescue have been implemented by governmental and non-governmental organizations in the coastal districts of Odisha (KII06-M; KII08-M; KII09-M). Evacuation trainings were raised as important and needed by men and women respondents. One of the issues that frequently emerged is that generational change and youth migration leads to loss of community knowledge of the acquired skills. A man in Khaita observed: *“The Red Cross has trained youth but girls get married and leave the village and boys migrate for work, so no one is left”* (FGD07-K-M). Similarly, in another focus group a woman said: *“The task force that was trained by the Red Cross 15 years ago doesn’t even live in the village anymore. They all migrated or left the village”* (FGD16-K-W).

There appears to be a significant gender disparity in the provision of evacuation trainings. Women seem to be generally left out or to participate less than men (KII09-M; FGD12-N-W). The trainings normally last 2-3 full days which makes it difficult for women to attend while fulfilling their household duties (KII09-M). While in Khaita and Dakhinaveda some women received trainings – although fewer in number than men – in Nuagan women reported never having been a part of any trainings and to be ‘unable to swim’ (FGD12-N-W), putting them under greater risk during floods; especially considering that the village does not have a shelter.

Women’s differentiated experience of the emergency shelters

Evacuation behaviour is influenced by many material, social and cultural factors (Chapter 2). The presence of a multi-cyclone and flood shelter in the village is critical to saving lives, especially in absence of pucca houses.⁶⁰ However, it may not be enough to ensure a safe evacuation for everyone. The fieldwork highlighted strong gender and caste differences in evacuation behaviour and experience of emergency shelters. An observation of primary importance is that, unlike men, women’s experience of cyclone shelters is described as ‘uncomfortable’, ‘traumatic’ and ‘unpleasant’ because of cramped mixed male and female rooms and toilets (FGD10-K-W). Both men and women highlighted the importance of having separate spaces (FGD07-K-M; FGD10-K-W). Key informants pointed out that harassment and

⁶⁰ Multi-purpose cyclone/flood shelters are elevated buildings constructed to provide security from cyclones, storm surges and floods. In Odisha the shelters are either built by OSDMA or the Red Cross (which started building shelters prior to 1999 and before the government). The criteria for the allocation of shelters are based on scientific assessments; most recently by a study conducted by the Indian Institute of Technology (IIT). These assessments do not include any social science analysis or community consultations (KII05-F).

sexual abuse of women in the shelter is not rare and that is sometimes even reported to the police (KII08-M; KII09-M). While being overall negative for all women, the experience of shelters can be worse for some. As explained by a key informant, women's caste, for instance, can play a significant role in influencing evacuation behaviour:

Upper caste women are usually the last to reach the shelters because it is considered socially unacceptable for them to sit in cramped spaces with SC men. SC women, on the other hand, are more likely to evacuate to the cyclone shelter but they are also more vulnerable to harassment (KII09-M)

While this inter-caste differentiation did not openly emerge from the fieldwork, the interviewed upper caste women generally reported taking shelter in concrete houses and very rarely declared having reached the cyclone shelter. SC women did not refer explicitly to episodes of harassment and caste discrimination, but some reported having left the shelter because the conditions were 'too bad'. Rajashree, 26-year-old, SC, narrated her experience:

I only went to the shelter for my first time during the cyclone Phailin but it was very tough for me. It was so crowded, and men, women and children were all together in the same room. I was with my in-laws and we decided to leave. We took shelter in our neighbour's house (Khaita_04)

During cyclones, SC people are sometimes allowed to take shelter within higher caste pucca households from which they are usually denied entrance (Fieldnotes 2016). In times of emergency, solidarity seems to outweigh gender and caste norms. Yachana, aged 30, SC reported: *"During cyclones we are all equal. At that time, I don't feel any discrimination because caste is not an issue"* (Khaita_16). However, once the situation of emergency is over, caste relationships and boundaries return to normal (FGD07-K-M).

Besides caste, age is another key factor influencing women's evacuation and their vulnerability. A key informant noticed that, when possible, newly married women and young girls are sent to friends or relatives' houses to avoid compromising their 'honour' in the shelter (KII09-W). Young women are in fact subject to strict social norms of behaviour that can heavily influence their, or their parents', decision to use the shelter – especially if from

upper castes – in order to preserve their ‘purity’. Newly married Subhra, 26-year-old, GC, lives with her parents in-law in a kutchra house while her husband works in Bangalore. She said that when there was a flood, her in-laws told her to prepare dry food and fuel wood and that they all remained in the house. She does not know why they did not want to use the shelter but she still remembers how scared she was: *“I was worried that the river would have taken us and swallowed us with the house”* (Dakhinaveda_22). In one FGD, an elder woman expressed her aversion to the fact that, in the emergency shelter, girls and boys chat with each other; a behaviour which would be unconceivable in everyday life, and that ‘threatens’ caste and gender norms (FGD04-K-W). In emergency shelters, caste and gender boundaries can, in fact, be challenged and renegotiated (Ray-Bennett, 2009).

7.3.2.3 Recovering from shocks and repeated losses

Recovering from shocks, financial, and livelihood losses appears to be a crucial dimension of adaptive capacity. Men and women identified factors that, in their view, could enhance households’ capacity to reduce vulnerability in the aftermath of a disaster or repeated stresses (i.e. consecutive seasons of crop failure).

Crop insurance and post-disaster compensation mechanisms, including compensation for livelihood losses and house damages, are widely discussed in men and women FGDS. In all the study villages, men were particularly vocal about the need for compensation and insurance for agricultural losses. Crop insurance is a complex and controversial issue. It is worth highlighting a few constraints that were identified by the respondents. For instance, similarly to the extension services provisions, government insurance and compensation mechanisms seem to hardly reach farmers, in particular sharecroppers/tenant farmers. A man FGD participant observed:

In cases of crop losses due to natural calamities we don’t receive any support from the government. Only if you have the insurance you can hope to receive some compensation [...] the insurance is from the government. Even if you get the compensation, the payment is always much less than the loss (FGD19-K-M)

In the same FGD, a sharecropper farmer highlighted: *“only landowners get the compensation, we [sharecroppers] don’t get anything and we lose all the money we invested*

[in agricultural inputs]" (FGD19-K-M). In a women FGD, one reinforced: *"there is no government support for crop losses unless people have insurance. Insurance is from the government"* (FGD10-K-W). The scheme mentioned in these excerpts refers to the Pradhan Mantri Fasal Bima Yojana (PMFBY), a crop insurance programme launched by the Government of India in 2016 to provide insurance coverage and stabilise farmers' livelihoods in the face of climate shocks and stresses (Gol, 2016b). The PMFBY is aimed towards all farmers, including sharecroppers, yet most respondents were unaware of the scheme. In some cases, for example in Nuagan, most people did not even know about the existence of the insurance schemes. These findings confirm recent assessments of PMFBY inter-state performance which point to poor programme implementation at district and village level (Rai, 2019).

Post-disaster compensation mechanisms for house damages share similar shortcomings. According to OSDMA, in the aftermath of a weather shock, financial compensation for partially or fully damaged houses is granted under the State Disaster Relief Fund within 45 days (KII06-M). However, in all villages the participants reported a number of inefficiencies. For example, in Nuagan a woman said: *"we ask [compensation] to the Sir Panchayat all the time. The day before yesterday the village leader had another meeting with him but he doesn't listen. We have never received any compensation"* (FGD12-N-W). In Khaita, a man noted: *"government officials only to visit during food distribution, we never see them otherwise [...] nobody comes to assess damages to the houses and the [agricultural] fields"* (FGD07-K-M).

7.3.3 Live in safe environments and access quality healthcare

Although not typical categories of adaptive capacity assessments, health and sanitation were considered, especially by women, of vital importance for one's wellbeing and capacity to adapt to changes. The following sections unpack the key elements that were highlighted in the discussions.

7.3.3.1 Availability and access to safe drinking water

Water quality was an issue raised especially by women. While water availability is not usually a problem in deltas, in all villages women reported that the water pumps closer to water bodies (river, sea) were becoming unusable due to salinity intrusion, which is leading to situations of water scarcity. In Nuagan, where only two out of the three water pumps were

used, a woman noted: *“there is not enough water. There are always long queues [...] sometimes we have to wait up to two hours. We only use two handpumps, the water from the other one [pump] is too salty”* (FGD18-N-W). In addition to adding time burden to women’s already busy work schedules, scarcity of safe water is linked to health problems. In a FGD in Khaita, a woman reported:

the water is not sufficient, we have to walk to other handpumps or to use the water of the pond which causes diseases. In the last few years the quality of the water deteriorated. It is salty [...] more and more people are suffering from high blood pressure, I think is the water. In the last few years, many children in the village have died of diarrheic and stomach diseases (FGD10-K-W).

Access to safe water is indirectly influenced by caste hierarchies. In the study sites, the affected water pumps with the lowest water quality were all located close to the embankment or riverbank in areas populated by SC households (Fieldnotes 2015). Upper-caste people do not allow SC to use other handpumps in the village. As put by a woman I met during a walk in Khaita: *“SC can only use their pump in their area. They are not allowed to collect water or wash themselves in other pumps”* (Fieldnotes 2016).

During floods and waterlogging, access to safe water becomes even more difficult. Overflow results in water pollution from dirt and human residues. In Dakhinaveda, women say that during floods, when only one or two handpumps can be used, sometimes they have to drink water from the river (FGD11-K-W). Interestingly, but not surprisingly, men did not consider access to safe water as a problem or priority. Water is a highly gendered topic entrenched in social roles (Mitra & Rao, 2019). Women have the primary responsibility for collecting water hence they are also more attentive to, and the most affected by, changes in water quality and availability.

7.3.3.2 Sanitation

Water, health and sanitation are closely related. In the study sites, most (if not all) households practice open defecation, which leads to the spread of diseases. This is especially the case during waterlogging when drinking water from the handpumps becomes contaminated with human waste (FGD11-D-W; FGD07-K-M). People defecate in the village, usually on one of the main concrete roads as they fear snakes in the bush and muddy areas.

During sunny and dry days, the smell was unbearable and the concentration of flies was appalling (Fieldnotes 2016).

Both men and women identified sanitation as a high priority. Some participants were aware of the national sanitation programme, the Swachh Bharat Mission (SBM), which provides households with a small grant for the construction of a latrine. As with the IAY housing scheme discussed before, issues around corruption, lack of transparency in the selection of beneficiaries and delayed payments were raised as factors limiting the adoption of latrines. In a FGD, a man stated: *“the government pays Rs. 12,000 to build a toilet but the government officials ask for commissions. We receive less than Rs. 8,000 and the money is paid in several tranches”* (FGD07-K-M).

Providing toilets may, however, not fully address sanitation problems. Odisha is one of the worst performing states in India in terms of sanitation (Ghosh & Cairncross, 2014) and one of those with the lowest latrine uptake (Chambers & Myers, 2016; Routray et al., 2015). In the study sites, the few households that had a latrine did not use them. People preferred open defecation due to cultural norms and beliefs (e.g. about emptying the toilet). Views about open defecation are also gendered. Women were generally more assertive than men in pointing out that sanitation is a priority. Toilets relieve the psychological stress of defecating out in the dark – some women participants reported fear of harassment when going to defecate – and physical risks such as holding out until dawn. Men are less restricted in terms of mobility (they spend much time in the fields), social behaviour (they are less ashamed to be seen) and are not as vulnerable as women to sexual harassment (Chambers & Myers, 2016).

7.3.3.3 Access to quality health services

Access to quality healthcare was discussed in both men and women FGDs but prioritized particularly by women. Problems related to accessibility and quality of healthcare were raised in all villages. The closest health center, which is in Rajnagar (12-16 km from the villages), serves all the villages in the RajNagar block and is described by both respondents and key informants as understaffed and lacking equipment. In a women FGD, one observed:

There are 40 villages for one doctor. For any complications or for long-term diseases, such as diabetes or cancer, people are referred to the Kendrapara

hospital which is 2-3 hours away from here and more than 60 Km. Private transportation is expensive and only few people can afford it [...] it costs around Rs. 1,500 (FGD11-D-W).

Poor access to healthcare is an important cause of debt, especially for the poorest and most vulnerable. Rita's story, 25-year-old, SC, is illustrative of similar cases. She says that her family had to take loans to pay for her daughter's visits. Since they are unable to repay the loans, she and her husband cut their daily meals. In her words:

The last loan we took was Rs. 4,000. There are not specialist doctors in Rajnagar and my daughter needs a paediatrician. We go to Pattamundai [30km from Rajnagar], Kendrapara has a better hospital but we can't afford to go there. We are struggling with these debts (Dakhinaveda_07).

Women are particularly affected by the lack of good local health facilities. As discussed in Chapter 5, women's mobility is restricted by social norms. Using distant hospitals may therefore depend on the availability of a male household member or neighbour, to accompany them. This is particularly problematic for women living in nuclear households with migrating husbands. When I asked Soma, 36-year-old, GC (husband in Delhi) where she goes when someone in the household is sick, she said:

I can go to Rajnagar by myself if needed, but not further than that [...] my sons suffer from respiratory problems. I am alone to take them to the hospital. They need specialist doctors but to go to Kendrapara I have to ask my brothers to accompany us all the time. Sometimes they are not available. This is my biggest worry in life [...] being unable to care for my children (Dakhinaveda_13).

Pregnant women receive some basic support in the village from the ASHA (Accredited Social Health Activist), who distributes vitamins, pregnancy kits and facilitates access to healthcare (e.g. accompanying pregnant women to the hospital).⁶¹ However, a key informant from the health department pointed out that ASHAs are generally not sufficiently trained to provide meaningful support and information (KII10-M).

⁶¹ A ASHA is a trained woman community health activist, nominated by the village and trained as an intermediary between the community and the health system. The main role of ASHAs is to raise awareness about health care entitlements and facilitate access to health services, especially for women (Fieldnotes 2015).

7.3.3.4 Food and nutrition security

The risk of food insecurity is particularly high in the aftermath of weather shocks. In a FGD, a woman highlighted how food scarcity can be accompanied by long periods of poor diet and nutritional deficiency, as well as tensions in the household:

After cyclones or floods, we [women] only eat one meal per day, only rice for months. Sometimes we eat some vegetables with the rice. No fish or eggs. It is very stressful. When there is no food in the house there is always tension (FGD11-D-W).

Unlike men, who did not express any concern regarding food insecurity, women often reported skipping meals in times of food scarcity, suggesting that they may be bearing the highest cost. As noticed by Pradhan and Rao (2018), hunger and food insecurity can aggravate domestic violence. Reducing their food intake to allow the other family members to have all meals, could be a strategy adopted by women to maintain peace in the household and reduce any conflict or tension.

Food and nutrition security emerged as issues during discussions about the Public Distribution Scheme (PDS) on which women put particular emphasis.⁶² For example, while discussing the ranking of priorities in the capacities/problems exercise, one woman said: *“PDS is even more important than agriculture because at least with the PDS you receive something to eat from the government, even if you don’t have any harvest”* (FGD10-K-W). This thought sparked a discussion among the other participants who agreed to place PDS in the top priority line. The food grains provided through the PDS are considered crucial to top up subsistence production for self-consumption, especially during years of low production or crop losses (FGD11-D-W).

Some participants pointed to inclusion and exclusion issues with PDS, mentioning ‘inadequate criteria’ for the beneficiary selection and lack of transparency by the local authorities in assigning ration cards (FGD07-K-M; FGD12-N-W). A widowed woman said: “/

⁶² The PDS is a national safety net programme aimed at fighting hunger and malnutrition. The beneficiary households receive subsidised food grains. There are two types of household categories: i) the poorest of the poor – Antodaya Anna Yoana (AAY) entitled to 35Kg of grain; and ii) the priority households (PHH) entitled to 5Kg per member. PHH include households with Below Poverty Line (BPL) and Above Poverty Line (APL) cards (Gol, 2013).

don't have a ration card even if I am entitled. In this village very few people have ration cards, how is it possible? We asked the sarpanch but we still haven't received any."⁶³ (FGD12-N-W). This excerpt highlights another critical factor shaping people's adaptive capacity to be discussed in the next and final section, which is that of voice and influence over decision-making.

7.3.4 Speaking up and being heard: influence on decision-making

Having a voice in decision-making was strongly expressed by both men and women participants as critical to advocate for one's needs and priorities at household, community and local level. Voice in this context signifies being heard as well as having the ability to express oneself; both aspects are closely.

The ability to speak up and express one's needs is influenced by individual and social factors. For example, low education was highlighted as one the reasons for lacking confidence to speak with the local authorities. Shika's story is illustrative. She is 42-year-old, OBC, and relocated with her family to government land in another part of the village after losing their house to the river. In cases like this, the local government grants land certificates, however Shika's family does not have any. When I asked her if they requested a certificate she said:

No [we didn't ask] you need money to apply for the land certificate but most of all my husband is not smart enough to go to the panchayat and ask for that. He is illiterate [...] he is not confident with talking with the authorities (Dakhinaveda_18).

Norms related to gender, age and caste may also limit people's ability to speak up and be heard. As discussed in Chapter 5, due to social norms women – especially young women – usually do not speak in public (i.e. with local authorities). Even if they participate in community committees their voice is rarely heard. During a discussion about community groups, specifically the Village Development Committee (VDC) and Cyclone Management Committee (CMC), a man said: *"women are formally part of the committees because it is a requirement from the government, but they don't participate in our meetings [...] in any case their opinion doesn't count in community decisions"* (FGD27-K-M). Because women do not

⁶³ The 'sarpanch' is the leader of the Panchayat (the village council) which is the lowest administrative authority, followed by Blocks and Districts.

directly address local authorities, being unheard in their community also limits their ability to influence local governance and decision-making. As also noted by Mitra and Rao (2019), in patriarchal contexts women have usually little decision-making power over water provision despite their pivotal role in its management. In Dakhinaveda, women debated men's view about requesting more handpumps from the panchayat which they did not consider a priority. One said:

we use the water well. We know better than men what is needed. We told them that in the village we need more hand pumps but they don't listen to us [...] they don't care and they don't ask to the sarpanch (FGD12-D-W).

Caste is an additional, intersecting, factor shaping influence in decision-making. As previously observed, in all the study villages SC live in areas that are generally more exposed to waterlogging, without concrete roads and with damaged water pumps. Neha, 45-year-old, SC, explains that during heavy rainfall SC households are isolated and disconnected from the rest of the village. All SC live in a low lying, muddy area. In her words:

We need a concrete road. We discuss it all the times with village development committee but they don't listen to us. We live near the river [...] if there is a flood the water comes in this area from three sides. We remain isolated for days (Dakhinaveda_06).

The above quotes indicate that the ability to speak up is important but not sufficient alone. If there is no willingness to listen, people's needs remain unheard and risk being portrayed as one homogenous voice.

Problems of corruption and lack of transparency by the local authorities previously highlighted in this chapter, are aggravated by the little voice given to communities in local planning and decision-making. In a FGD with men, one reported:

Lack of voice is a problem. For example, if we need a concrete road, only the head of the village and other two-three people go with him to the Panchayat office [...] we went so many times also to the Block office to ask for a road and a

shelter [...] nobody listens to us [...] only if someone from the village acquires political power they will listen (FGD08-D-M).

Nuagan, the poorest and most vulnerable among the study sites was excluded for years from the Block list of the flood-prone villages – thus from any related interventions – until a few weeks before my fieldwork started, when a university educated villager, with government connections, returned from migration and took care of the issue (Fieldnotes 2016).

The discussion in this section highlighted the key role of voice in enabling (or constraining) people's adaptive capacity especially in disclosing differentiated needs, which is key for inclusive and equitable adaptation interventions.

7.4 Interacting and enabling factors

Following the previous discussion, which unpacked the key determinants of adaptive capacity, this section seeks to take a closer look at the dynamic interaction among such elements which mutually influence each other. In doing so, the section highlights the role of some factors as enablers in these processes.

Low levels of capacity in one determinant may influence others and vice versa. For example, section 7.3.1 pointed out that lack of access to land constrains access to finance, especially formal credit that has low interest rates. This, in turn, could limit the uptake of new agricultural technologies, which is a needed capacity to adapt to climate stressors in agriculture-dependent communities. Yet, for such conditions to be fully satisfied people also need access to information (i.e. about available technologies), and they need to possess the right skills that allow them to benefit from the available capitals. In the same section it was highlighted that material conditions might not be sufficient. Skills and education are pivotal to access credit (i.e. financial literacy) and to be able to adequately use technologies.

Some factors, such as education and access to information, emerge as enablers that could compensate deficiencies in some determinants of adaptive capacity. For instance, limited access to credit (i.e. due to lack of collateral) and technologies (i.e. modified seeds) could be partially compensated if people are aware of government agricultural schemes and subsidized inputs, or similar programmes that support livelihoods resilience. Education can improve access to information and, as illustrated in section 7.3.3, has a significant influence

on agency and on the ability to confidently speak up for one's needs. A common element that cuts across the various categories of determinants is the inefficient implementation of policies and programmes, either in targeting or provisioning (i.e. agricultural programmes, compensation schemes, housing schemes etc.), which is often exacerbated by participants' lack of awareness (i.e. people are unaware therefore fail to request access to these schemes). A key informant argues that lack of information limits people's ability to benefit from rural development and DRR programmes:

There is a communication gap between government and communities about the existing schemes, for example in agriculture, health and sanitation. Corruption in governments and NGOs does not allow an equal and inclusive implementation of these programmes [...] it is important that people have the necessary information so that they can ask for what they are entitled and advocate for their needs (KII2-M).

Similarly, a health officer says about access to healthcare:

Health cards are only given to those who can speak. Poor people have no voice. I think that the block officials should go door to door to inform people about the utility of the card, but it's not like that. People have to reach the Rajnagar office to ask for it. How is it possible if the majority of people doesn't even know what a health card is? There are so many illiterate people. How can they know?.⁶⁴ (KII10-M).

Despite being crucial, access to good quality education in rural areas is limited. The participants mentioned that the teacher-student ratio in schools is inadequate (FGD17-D-W). During the fieldwork, the school in one of the study villages was closed because the teachers had not received their salary. The villagers were collecting money to pay to pay the teachers so that lessons could continue (Fieldnotes 2016). Households that can afford private education pay for tutors .

⁶⁴ Health cards give access to financial aid for health treatments and cover the cost of transportation between public health facilities and specialized visits among other health-relates services.

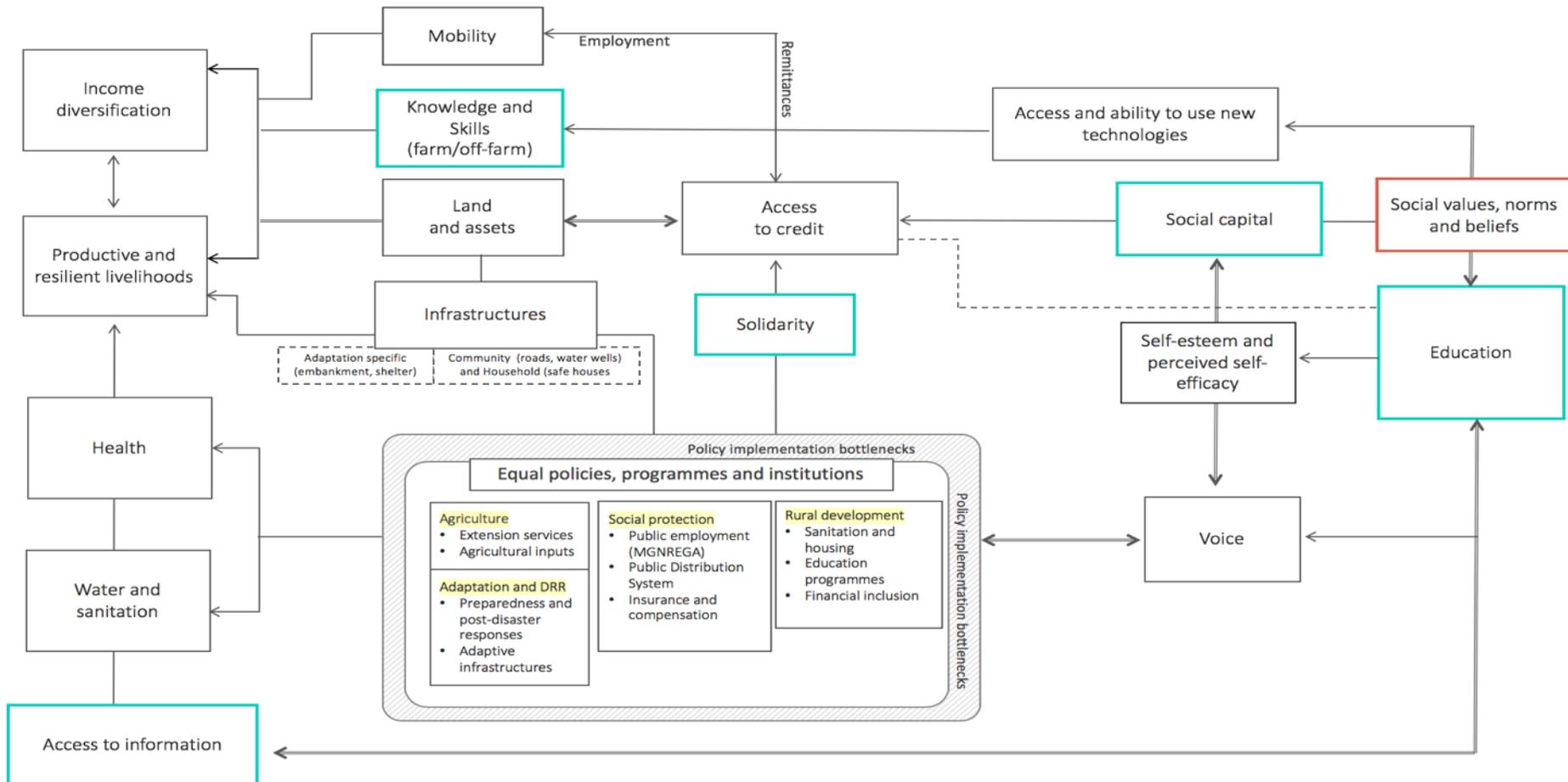
Besides education and access to information, social capital also emerged from the analysis as an enabling factor that can reinforce positive loops and compensate for deficiencies. For instance, section 7.3.3.4 discussed access to health services and pointed out that networks of friends and kins can help address women's mobility issues in reaching hospitals and health centers. Social capital can facilitate evacuation. In section 7.3.2 it was highlighted that, during emergencies and evacuation, villagers with pucca houses offer protection to those living in kutcha houses, irrespective of their caste, thus compensating for the lack of village shelter. Those with friends and family networks outside of the village prefer to evacuate to avoid using the multi-cyclone shelter that, as noted before, can be a stressful and unpleasant experience especially for women (FGD10-K-W).

Solidarity is considered crucial. In one FGD a man commented: *"solidarity is everything. For example, when someone has some financial difficulties, others help with food or money [...] if someone is sick, we collect money to help [...] I can offer my bicycle if someone needs to go somewhere"* (FGD09-N-M). Saroja, 46-year-old, GC, widowed, explains that when she lost her husband, her in-laws refused to take care of her and her children, and it was only thanks to the solidarity of the villagers that she could rebuild her life. She says:

When my husband passed away, my brother in-law told me: 'why should we take care of you and your children?' I was desperate. My children were very young. The villagers helped me with everything. They helped me to get my widowed pension. They went to the Panchayat for me [...] and they gave me a job as cooker in the village school (Khaita_21)

Figure 22 provides an illustration of the possible interactions of determinants, constraining and enabling factors of adaptive capacity, as they emerge from this study. This is not intended to be a universal interpretation of what constitutes adaptive capacity which is acknowledged by this study as being context-specific and socially differentiated (Chapter 2). It rather aims to show its complex and dynamic nature and the limits of static interpretations of adaptive capacity that fail to fully grasp such interconnections. The next section provides a final overview of social differentiation and subjective perceptions of adaptive capacity.

Figure 22. Interrelated determinants and enabling factors of adaptive capacity



Source: Author's elaboration

7.5 Socially differentiated priorities and determinants

This chapter has so far highlighted that power relations, norms and individual identities shape people's perception of what it is needed to enhance their adaptive capacity. Table 11 shows the top ten determinants identified by men and women as critical to their capacity to adapt to climate change impacts. The table is an illustrative example of gender differences in the identification and prioritization of needs and capacities.⁶⁵ Although the factors identified are similar, men and women prioritise them differently confirming that understandings of adaptive capacity are subjective and embedded in social differences. While resilient livelihoods is a top priority for men, who are primarily responsible for agriculture, women emphasize access to water, health and sanitation whose deficiencies affect them the most. Within these social groups there are multiple layers of further differentiation. For instance, for SC women, access to safe water is one of their highest priorities given the additional barriers that they face (see section 7.3.3.1). Similarly, despite 'voice' is generally valued of high importance by everyone, SC people emphasize it even more owing to their limited decision-making power, both at community and local level. Food and nutrition security is mainly prioritized by women who are reporting skipping meals and reducing their dietary intake during times of food scarcity as we have seen earlier in this Chapter (section 7.3.3.5). Men give, instead, higher importance than women to agricultural and vocational trainings for reasons related to gender division of labour and gender norms regarding participation in paid work activities. Mobility was considered a determinant of adaptive capacity only by men, while women consider it a constrain (both lack of mobility and male-out migration). In FGDs men reflected mainly on the benefits of migration for livelihoods diversification and income. They discussed less about its social implications which, on the contrary, was a leading topic of discussion among women. More about the socially differentiated outcomes of migration in the next chapters (Chapters 8 and 9).

The below Table (Table 11) exemplifies some of the above discussed gender differences in perceived determinants of adaptive capacity. Table 12 will then reveal intersecting gender and caste differences.

⁶⁵ The table draws on the outcomes of PRA and FGDs held with men and women in Dakhinaveda. Dakhinaveda was taken as an illustrative example, the results were overall consistent in all the study sites.

Table 11. Top ten determinants for adaptive capacity for men (left column) and women (right column) in Dakhinaveda

Men	Women
Resilient livelihoods	Access to water
Voice (+ for SC)	Resilient livelihoods
Shelter and early warning	Education
Infrastructures (pucca houses, embankment)	Health
Access to finance	Sanitation
Trainings and employment	Food security
Sanitation	Voice
Access to water	Mobility
Health	Pucca houses and shelter
Education	Solidarity

Source: Author's elaboration from men and women capacities/problems PRA in Dakhinaveda (FGD11-D-M; FGD17-D-W)

Following the above discussion on prioritization, Table 12 refers to the adaptive capacity framework presented in section 7.3 and provides an explanatory assessment of gender and caste differentiation in the fulfilment of the identified determinants. The values applied are based on my own interpretation of the qualitative data and seek to help visualizing the gender and caste differences discussed in this Chapter.⁶⁶

⁶⁶ SC is taken as illustrative case of the most disadvantaged caste.

Table 12. Exploratory assessment of differentiated access to the determinants of adaptive capacity, disaggregated by caste and gender

Determinants		Enabling factors	
Livelihoods and security of income	Access to land and credit  Agricultural inputs and technologies  Capacity to innovate and use technologies  Livelihoods diversification and off-farm employment 	<ul style="list-style-type: none">  Due to the gender division of labour and gender norms, women (independently from caste and age) have low or no access to this category of determinants;  SC have generally lower access than other castes due socio-economic factors, marginalization and lower access to information;  Upper caste men are limited by low skills and knowledge, low access to technology, lack of employment opportunities, financial illiteracy, inefficiencies in agricultural extensions services' provisions etc. 	Education; Social capital/networks; Solidarity; Access to information
Prepare and recover from shocks and losses	Safe concrete houses  Safe evacuation  Ability to recover from shocks and losses 	<ul style="list-style-type: none">  Women are more vulnerable during evacuation, especially young women, they are less trained and exposed to episodes of harassment in the shelter;  SC have low capacity to recover from shocks and losses due to limited access to compensation and insurance mechanisms and general worse socio-economic and physical preconditions (e.g. kutcha houses in vulnerable areas)  Upper caste men have overall better access to these determinants than the other social categories, however limited by low awareness of DRR and social protection policies and their inefficient implementation and limited access to finance 	<ul style="list-style-type: none">  Women have generally lower education and lower access to information (especially young women)  SC have generally lower education, low access to information
Health, water and sanitation	Water quality and availability  Access to sanitation  Access to health services  Food and nutrition security 	<ul style="list-style-type: none">  Women have generally lower access to healthcare due to mobility constraints, they are more food insecure and more vulnerable to lack of sanitation  SC households are generally more food insecure, have lower access to good quality water, lack capital to build toilets and have lower awareness of government schemes  Men have generally nutritious food, especially upper caste men, they have better access to health than women and about the same (low) access to sanitation than they are less vulnerable (e.g. to harassment) 	<ul style="list-style-type: none">  Upper caste men have better education and better access to information

<p>Influence on decision-making</p>	<p>Household decisions </p> <p>Community decisions </p> <p>Voice with local authorities </p>	<p>● Women have low or no decision-making power at community level, they do not directly speak to local authorities. Young women, especially young daughters in-law have in general very limited voice in the household</p> <p>● SC men have low decision-making power at both community and local level, they have lower education and lower perceived self-efficacy. No difference has emerged between SC and upper caste women in terms of decision-making power</p> <p>● Upper caste men have higher intra-household and community decision-making power, especially older men. Influence over decision-making at local level (local authorities) is generally low but higher than the other social categories.</p>	
<p>Equal and inclusive policy and programmes implementation</p>	<p></p> <p>Agricultural schemes</p> <p>Rural development (education, infrastructures)</p> <p>Social protection</p> <p>Climate change (adaptation and DRR)</p>	<p>● Policies and programmes' implementation <u>is</u> generally not attentive to gender issues, gender norms and beliefs limit gender inclusion across scales</p> <p>● Despite the existence of special provisions for disadvantaged castes in policies and schemes, their implementation results to be overall unequal or constrained by SC lack of awareness and <u>and</u> low voice</p> <p>● Upper caste men have generally better access to agriculture, rural development and adaptation and DRR programmes, yet constraints related to corruption and lack of transparency of local government as well as limited information remain</p>	

Legend:  From absent to abundant ● Women ● Men ● SC (W/M) | Source: Author's elaboration

7.6 Conclusions

This chapter has taken a novel approach to the analysis of local adaptive capacity by investigating it from a bottom-up perspective, through men's and women's own evaluation of their capacity needs. It aimed to provide a nuanced and empirically based understanding of adaptive capacity that accounts for diversity and social differentiation, and emphasizes the interaction of processes and contextual factors through which people's needs and capacities are shaped.

The chapter started with an analysis of people's perception of climate and environmental stressors (section 7.2). As noticed, men's and women's understanding of their adaptation needs and capacities is intimately linked to their perception of environment-related stressors which is, in turn, shaped by their individual experiences and social identities. The section showed that people's perception of climate stresses is generally consistent with climatic impacts identified in scientific studies (Ghosh et al., 2019), confirming a high exposure and vulnerability of Kendrapara to multiple climatic stresses and shocks. Surprisingly, men and women showed higher risk perception towards salinity intrusion and coastal erosion than towards cyclones and floods, to which coastal Odisha is highly exposed. This could suggest that people perceive to be better prepared to cope with extreme weather events than with slow-onset climatic changes. Such perception of risk is important to consider in policy and programmatic responses that seek to address adaptive capacity needs of rural people in the districts.

Section 7.3 presented a framework for the analysis of adaptive capacity consisting of four interdependent dimensions that emerged from the discussions with men and women namely: i) Livelihoods and security of income; ii) Capacity to prepare, respond and recover from shocks and losses; iii) Living in safe environments and accessing quality health care; and iv) Influence over decision-making. As pointed out at the beginning of this Chapter, the adaptive capacity assessment conducted here sought to move away from assets-based approaches and to adopt a more flexible framework which allows for the integration of cultural and social dimensions. Overall, the findings show that both men and women express a combination of generic (development-related) and specific (climate-related) capacity needs. New technologies (i.e. climate resilient agricultural practices and inputs), tailored skills (i.e. evacuation trainings) and adaptive infrastructures (i.e. embankment and shelter) are considered pivotal for adaptation, however factors related to rural development issues

(i.e. access to assets, finance and resources, education, access to information) also emerge as critical for adaptive capacity. The analysis highlighted the importance of 'voice', intended as the ability to speak up and being heard, hence to influence decision-making. Aspects related to agency, such as voice, are largely overlooked in assets-based assessments, yet this study shows their importance. This may open up new perspectives, challenging traditional top-down approaches to adaptive capacity that tend to evaluate the context as if the 'subjects' were passive recipients.

Section 7.4 investigated the interaction among determinants. It demonstrated that looking at adaptive capacity as a static set of factors fails to explain the processes through which these elements influence and reinforce each other. Low levels of capacity in one determinant can affect others. The section also pointed out the enabling role played by some factors, such as education and social capital, which under certain conditions, can compensate for capacity deficiencies. Further, section 7.5 highlights how the significance of adaptive capacity (what factors constitutes such capacity and which ones are of highest importance) is strongly influenced by power relations and social identities. Different social groups have different understandings of their needs, constraints and priorities.

This chapter contributed to address empirical knowledge gaps in local, household and intra-household level processes of adaptive capacity (Cohen et al., 2016; Toole et al., 2016). It also expanded on the notion of adaptive capacity, providing nuanced understandings of the concept and pointing to its heterogeneous and dynamic nature. The discussion in this chapter lays the basis for the migration-gender-adaptation discussion that will be undertaken in the next chapter (Chapter 8) and for a critical reflection on the state of knowledge of adaptive capacity and its implications for policy making (Chapter 9).

CHAPTER 8. WOMEN'S ADAPTIVE CAPACITY IN THE CONTEXT OF MALE-OUT MIGRATION

8.1 Introduction

This chapter seeks to address the overall aim of this study, drawing on the findings discussed in Chapter 5, 6 and 7. This thesis sought to develop an improved understanding of how migration differently shapes women's adaptive capacity. The focus is on the women who remain behind in migrant-sending households.

The chapter builds on Chapter 5 that dissected gender and power dynamics, unveiling some of the root causes of inequality and unpacking the processes underlying intra-household hierarchies. The chapter links these findings to the discussion on adaptive capacity (Chapter 7) that pointed to gender differentiated determinants and constraints and that showed how the process of adaptation is embedded in social systems. It finally reflects on the socially differentiated outcomes of migration that were discussed in Chapter 6, including the less tangible impacts of migration on power structures, agency and empowerment.

The discussion that follows brings together these three streams of analysis (adaptive capacity, migration and gender). It does so by expanding the analysis conducted in Chapter 6 to explore more closely the differentiated impact of migration on the women left-behind from multiple angles (from section 8.2 to section 8.5) and by linking these results to the findings of Chapter 7. It concludes with some final remarks (section 8.6) that lead to the critical discussion on literature and policies presented in the final Chapter of this thesis (Chapter 9).

8.2 Changes in intra-household structures, roles and power relations

Migration can bring profound changes in the household in terms of roles, responsibilities and power dynamics. Similar to other studies (see Desai & Banerji, 2008; Saha et al., 2018), this research highlights distinctive patterns between women staying in nuclear and extended households. The women left behind in nuclear households were shown to have increased their decision-making power over day-to-day financial decisions and to have more mobility but also increased workload. In contrast, women in extended households did not notice any significant change in terms of workload but seem to have generally less

bargaining power than before migration, and sometimes also less mobility. A closer look at these general patterns reveals, however, a more nuanced and complex picture.

8.2.1 Remittances and women's voice in extended households

In extended households, the in-laws become the managers of remittances and mothers in-law reinforce their role as guardians of patriarchal norms through control over daughters' in-law mobility and behaviour (section 5.2.2). In most cases the migrant's wife is the recipient of remittances but has no say in decision-making or control over the money received. Sujata, 23-year-old, OBC, for example reports:

My husband sends around Rs. 3-4,000 every month to my bank account. I go to the bank with my mother- or brother in-law. I withdraw the money and give everything to my in-laws. They [in-laws] take all the decisions. If I need something for myself or my child I have to ask them (Dakhinaveda_11)

When there are no male members left in the households, it is the mother-in-law who becomes the manager of the remittances. This can also be the case when the father-in-law is old. Sharabani, 24-year-old, GC, said: *"I withdraw the money and give it all to my father in-law. My in-laws take all the decisions in the household, especially my mother in-law, she has the final decision [...] my father in-law is old"* (Dakhinaveda_17). In rare cases, migrants' wives that live in extended households are able to keep small sums of money. This mostly happens when women are more mature, usually in their 30s, thus when they have a higher position in the household hierarchy than young women (see Chapter 5, section 5.2). The case of Ruma, 38-year-old, GC, is illustrative. She lives in a large extended household with one brother-in-law, two sisters-in-law and six children. Her husband, who is in Kolkata, sends around Rs. 5,000 every month. She said that she keeps part of the money for the education of her three daughters. In Ruma's words:

[...] I keep Rs. 2,000 for myself and I give the rest to my brother in-law [...] I use that money to pay for private tuitions for my daughters and for emergencies. It is important for me that my daughters have a good education. Without education we are blind (Nuagan_10).

Ruma's case remains an exception as, generally, in extended households the wives of migrants have no control over remittances or voice in decision-making. On the contrary, they often reported to have less bargaining power in the household following the migration of their husbands (Chapter 5).

A related aspect that deserves attention is the interdependence between remittances and women's status. While in the research sites remittances were reported as being normally regular, in some cases migrants were either not sending money or sending lump sums every few months. The irregularity of remittances can affect the status of the women who stay behind in extended households hence also affect their voice in decision-making, including on decisions regarding their health or the health of their children. The story of Puja, 26-year-old, GC, is explicative. Puja lives with her in-laws. Her husband is in Bangalore but he does not send regular remittances (she does not know why). She had a baby two months before our interview and she tells her story. Puja had a difficult delivery. The doctor in Rajnagar told her that there were complications they could not address and that she had to go to the hospital in Kendrapara, or even Bhubaneswar. However, her in-laws refused to take a loan to pay for the medical expenses and so 'forced' the doctor in Rajnagar to perform a normal delivery. Her new-born has health problems. She does not know exactly what he has but she says that half of his body is paralyzed, probably because of the birth trauma. During the interview Puja became very emotional. She said that her baby needs specialized doctors but she does not know how to help him. The following quote is what she said when I asked if she spoke with her in-laws about this: *"If my husband was sending money to them I could ask but he is not, so I have no say in the household [...] not even on my baby's needs [...]"* (Dakhinaveda_21).

It is difficult to establish whether Puja would have had more weight in decisions concerning her and her son's health if her husband was in the household. However, it is clear from her quote that her voice in the household is affected by whether her husband sends or not remittances.

8.2.2 Striving between increased mobility and dependency

In nuclear households, women left behind are usually the managers of remittances and have full responsibility for the household, including financial responsibility for day-to-day decisions. As they are alone, they take on men's traditional activities outside the village such

as shopping for groceries in the market or going to the bank and accompanying household members to the health centre in Rajnagar (see Chapter 5, section 5.3.3, for the discussion on the gender division of labour).

However, having less mobility constrains does not necessarily equals having more autonomy. As observed in Chapter 5, it is considered socially unacceptable for women to leave the village unaccompanied by a man. Consequently, women left behind in nuclear households heavily depend on the help of neighbours or relatives to undertake activities outside of the village. Being 'dependent' on others is reported by most women as one of their biggest concerns and sources of stress. This quote from Ranjita, 36-year-old, GC, who lives with her two children, is illustrative: *"I feel overburdened because I depend on others for everything"*. Ranjita explained that she is grateful for the help received by her neighbours but relying on them makes her feel anxious. She says:

Neighbours are not always available. They have their own families. If my children get sick at night and I have to go to the hospital, how can I ask my neighbours to come with me? [...] this situation puts a lot of tension on me (Dakhinaveda_13).

Riya 30-year-old, GC, echoes Ranjita, highlighting that also in nuclear households women may need to ask permission from their in-laws to leave the village:

I never go to the market, I usually ask my nephew or brother to buy the things that I need. If my family members are not available I have to ask to other villagers. I always depend on someone else [...] I always ask permission to my mother in-law, even if we don't live together (Nuagan_19).

When I asked Soniya, 30-year-old, SC, living with her three children, what was the change that affected her the most after her husband migrated to Kerala she said: *"[...] going to the hospital, leaving the village. I don't like that I depend on others for the market and for everything. If my husband was here [home] I didn't have to depend on others"* (Nuagan_13). Archana, 34-year-old, GC, noted that although she usually calls her brothers to be accompanied, sometimes she has to venture alone. However, that makes her feel vulnerable and emotional: *"If my children need something, I can't just decide to go to the market alone. I only go if I am forced. I feel very emotional being by myself"* (Dakhinaveda_08).

Within migration as adaptation discourses, increased mobility is generally considered a positive effect of migration on women's empowerment and autonomy. However, most of the women living in nuclear households that were interviewed in this study perceived it as a cause of stress, especially as their acquired mobility is *de facto* dependent on others' availability to accompany them and it is imposed by the situation rather than chosen.

Not everyone can count on neighbours' or kin's support. SC women may have smaller kinship support groups than GC and OBC women, especially considering the relatively low presence of SC households in the study area.⁶⁷ Tanushree, 28-year-old, SC, lives with her two children, a six- and seven-year-old, whilst her husband is in Andhra Pradesh. She reports that they experience food insecurity and that she skips meals to be able to feed three meals to her children. Nonetheless, she also says that she buys groceries from the shop in the village which, besides having a limited variety of fresh vegetables, is expensive. She explains why:

I never go to the market. I know that the shop here is more expensive but I don't have any option. There are only few people that could accompany me, so I bother them only if it is necessary, for example if my children are sick and we need to go to the health center (Khaita_15).

Tanushree's limited access to social networks further affects her mobility and, in turn, adds a strain on her already precarious food and nutrition security as she buys highly priced groceries in the local shop because she is unable to reach the market. She also reported that she does not go to the bank and pays a commission to other villagers to withdraw money on her behalf. In her words: *"I am illiterate and I am scared to do it [withdraw money] by myself. I ask to other villagers to take money out for me. I give them Rs. 100, plus I contribute to the cost of the transport"* (Khaita_15). This quote sheds light on a key aspect highlighted in Chapter 7 which is the role played by education as an enabling (or constraining) factor of adaptive capacity. A lack of education can in fact exacerbate barriers to adaptive capacity and inhibit its determinants. While this is true in all situations, with or without migration, illiterate women left behind may experience greater challenges. Allowing others to access

⁶⁷ Abiding to social norms, upper caste people would not accompany SC women outside the village.

her bank account undoubtedly exposes Tanushree to multiple risks (i.e. theft, exploitation) and paying commissions adds pressure on already limited financial resources.

8.2.3 The burden of responsibilities: the psychological impact of migration

As noticed before, in nuclear households left behind women take on increased responsibilities. While this is usually seen as a positive aspect of male-out migration potentially leading to increased empowerment (Desai & Banerji, 2008), the findings of this study point to more nuanced views.

Most of the women interviewed reported that they were 'unhappy' to have more responsibilities, which made them feel 'tense' and 'mentally overburdened'. In contrast, they felt 'relaxed' when their husbands returned for home visits and took back 'control' of the household. The below excerpt from my interview with Soniya, 30-year-old, SC, is illustrative of similar cases:

Q: Who makes the decisions in the house?

Soniya: If I need to buy groceries or to spend money for my children's health I don't wait for my husband's permission, I only inform him afterwards [...] now that my husband is away I have to do everything. I take decisions over money for everyday expenses.

Q: How do you feel about having more responsibilities?

Soniya: It is a negative thing for me. All the burden is on me. Before [the husband migrated] we shared responsibilities.

Q: What does it mean for you to stay behind?

Soniya: It means that I'm responsible for everything now but these responsibilities are imposed on me. I don't want them [responsibilities]. When my husband was here we shared all this.

Q: Do you ever feel overburdened?

Soniya: Yes, sometimes I feel mentally overburdened, when it happens I spend time with my children to think away [...] It's more mentally than physically. I am used to household activities, I'm not bothered by that (Nuagan_13).

As highlighted in other studies, when assuming responsibilities is not a choice this could lead to stress and psychological burden, especially when the new tasks conflict with patriarchal

beliefs about men's and women's socially accepted behaviours (Gartaula et al., 2012; McKenzie & Menjivar, 2011; Salgado de Snyder, 1993). This brings us back the concepts of choice, agency and subjective wellbeing discussed in Chapter 2 and contributes to explain why 'objective power' does not necessarily equal improved wellbeing.

Like Soniya, most left behind women in nuclear households reported feeling 'relaxed' and to 'release [of] the tension' when their husband returned home, even for short periods. Babita, 25-year-old, GC, for example says: *"when my husband is away I am forced to take all the responsibilities and I have to do everything by myself. When he is here, I am free from all the tension"* (Nuagan_19).

It is important to mention that although women, especially those living in nuclear households, predominantly describe their husband's migration as an undesired condition – something *"they have no choice but to deal with"* (Dakhinaveda_01) – that has negative effects on them, they also acknowledge its benefits and prioritise family wellbeing over their own wellbeing. Babita, 25-year-old, OBC, noted:

Sometimes it is too much [too many responsibilities] I want to call my husband and ask him to come back but I soon realise that migration is our only source of income. I accept the situation for the sake of our future [...] and I tell myself to be strong (Khaita_11)

Babita's quote supports evidence that left-behind women have an active role in migration and encourages us to broaden our understanding of 'immobility' in order to surpass interpretations that depict those who stay behind as inherently passive. This has implications also for the migration as adaptation discussions in which the household members left behind are usually seen as 'recipients', whereas in reality they play an active role in shaping migration decisions and migration outcomes.

8.2.3.3 "Being left-behind makes you foolish"

The psychological burden of increased responsibilities is, in most cases, accompanied by feelings of loneliness and negative emotions. Ranjita, 36-year-old, GC, exemplifies the common sentiments of women left behind in nuclear households. Her husband is in Delhi

and she lives with her 11-year-old and 6-year-old sons. I asked her what it means to be left-behind:

I don't have much workload but I have many responsibilities. I have to raise my children alone [...] sometimes I cry. I feel lonely. My husband is away. I live apart from my [extended] family. Unity is strength. Staying alone makes you foolish.

Ranjita shares her life journey, from being a young daughter in-law in an extended family to a *de facto* head of the household since her family separated. Her story offers insights into women's perspectives of the trade-offs between autonomy, mobility and decision-making power and emphasizes once again the importance of choice and subjective wellbeing. In Ranjita's words:

Before [8 years before our interview] we were living in an extended family with my in-laws. I was the youngest daughter in-law. At that time I couldn't leave the house by myself. I had to ask permission to my sister in-law [...] Actually I had to ask permission to everyone and I was not involved in any decisions. Now [since she lives in a nuclear household] I still need to be accompanied but I don't have to ask for permission to anyone if I need to go outside the village. On one hand it built my confidence, on the other hand is not positive because I have to think about everything by myself. Before my life was good because I was staying with my in-laws we shared everything with each other. I shared my feelings with my sisters in law. We used to prepare food together, eat together [...] I was not feeling alone (Dakhinaveda_13).

The ability to share negative emotions partially mitigates the psychological burden of being left behind. The next short section briefly discusses this issue revealing interesting patterns in this regard between migrants and left behind wives.

Mitigating negative emotions: movers and stayers

Some women reported that when they feel 'stressed', 'hopeless' and 'overburdened' they call their husbands and talk with them about their worries. Raadhi, 50-year-old, GC, says:

I have a lot of responsibilities, sometimes it makes me sad and emotional. When it happens, I call my husband and I share my feelings with him [...] He sometimes also talks about his problems [...] He supports me in every situation. We support each other (Dakhinaveda_21)

Emotional support is crucial to mitigate the psychological burden of being left behind. In Raadhi's case such support is provided by her migrant husband, confirming the socio-spatial interconnectedness between the migrants and their families. This is another aspect often overlooked in the women left behind narrative, showing that social support can be bi-directional. It also highlights the 'affective interdependence between movers and stayers' (Boccagni, 2015). I noticed that these emotional ties were weaker, or at least less manifested, among women living in extended households where migrants' wives are expected to turn to their sisters-in-law or mothers-in-law for emotional support. Yet, from the stories collected in this study that seems to be rarely the case signalling a further element of vulnerability and isolation. As discussed in Chapter 5, young women generally feel uncomfortable to express their feelings with their sister- or mother in-law. Surbhi, 23-year-old, OBC, explains:

When I am sad or emotional I talk with my husband over the phone but often my sister in-law is around so I don't feel comfortable to express myself at fully [...] She can hear me. When he [husband] is here we share our feelings and thoughts [...] It makes me happy. When he is not here I force myself to talk with her [sister in-law] (Nuagan_11).

The link between emotions and adaptive capacity may not be directly apparent. However, emotions affect changes in behaviour and cognitive activity such as people's own evaluations of their life (Diener et al., 2009). Negative emotions can therefore have impacts on the cognitive aspects of adaptive capacity (i.e. self-esteem and perceived self-efficacy) and influence risk perception (Chapter 2); both of which are fundamental to transform capacity into concrete adaptation measures (Grothman & Patt, 2005).

8.2.4 Mutating 'meanings' of migration through women's life stages

Although the predominant narrative with regards to the impacts of migration is that of psychological and emotional burden and increased dependency, a few cases of left behind

women in their late 30s or older reveal positive experiences of gradual empowerment. Garima, 40-year-old, GC, recalls her journey from when her husband first migrated over 10 years before our interview:

The first years that my husband was away I was fully dependent on others. I asked the villagers to buy groceries for me but then I decided to do things by myself. I take my children to the hospital, I go to the market, I do everything [...] Since I'm alone I learned how to take on these responsibilities. I think it's positive because I'm more confident now.

Garima further highlights that she gained her confidence over the years and that she initially experienced similar challenges to those discussed earlier in this chapter and reported by younger women. She says:

Being here by myself with the children grew my confidence. I became a strong woman. At the beginning I was scared. I was worried to be judged [...] that others could 'comment' on me because I was alone. I was also worried that something could happen to me or my children and nobody was here to protect us.

Garima's story shows that confidence can grow over time and be influenced by changes in the household composition. She noted that because her son is growing up (he was 16 years old at the time of the interview) she is 'less scared' and 'feels less vulnerable' (Nuagan_16). Empowerment is a gradual process and the impacts of migration on the women left behind are not static but shaped by mutable individual (i.e. changes in consciousness) and household conditions (i.e. children growing up) as well as external factors.

The next two sections discuss the implications of male-out migration for women's physical vulnerability and ability to cope with climatic shocks.

8.3 Experiences of physical vulnerability

The absence of a resident man can expose women living in nuclear households to various forms of physical vulnerability, including sexual harassment. Women referred to these episodes as making them feel 'fragile', 'scared' and 'vulnerable'. Meena, 50-year-old, OBC, said:

When my husband left [migrated] there wasn't any other house nearby⁶⁸. I was staying alone with my children and one night someone tried to get in. He wanted to rape me. The day after I went to talk to the village committee. After that episode, the villagers helped me a lot [...] I was sleeping with my children in a neighbour's house. During the day we returned home. It was like this for a year, then my father came to live with us. Then other families moved in this area of the village and he could return home (Khaita_03)

Meena mentioned several times that for a woman who lives alone, solidarity is crucial and that *"when the villagers help each other you feel safe"*. Babita, 25-year-old, OBC, also remarked the importance of solidarity and help from the community members. However, her experience is different and she explains that she still feels vulnerable. The following quote is Babita's answer when I asked her what the main problems in her life are:

Being alone is my biggest problem. The help of neighbours is very important. It is the most important thing. They help me a lot during the day but in the night I'm alone. I'm scared that somebody could break into the house and hurt us [her and her children] or steal our cow. One night, after we left our in-laws house and we first moved here, people threw stones to the wall and stole the bricks and the sand for the house construction [...] (Khaita_11).

The fear of being harassed makes women nervous to go out for open defecation; one of the reasons why they consider sanitation a high priority (Chapter 7). For women who stay behind in nuclear households it is particularly challenging. Babita, for example, reported that she is scared to leave the house when it is dark outside. In her words: *"I am alone and I am scared that somebody assaults me. There is no one at home who would be alerted if I don't return [...] Sometimes I take my children with me [...] I'm trying to be confident"* (Khaita_11). Sumana, 23-year-old, OBC, used to live alone with her child until she was assaulted six months before our interview. Since then she has moved in with her in-laws. She explains that without the presence of her husband a woman is more vulnerable:

⁶⁸ Meena's house is at the entrance of the village before the cyclone shelter, slightly detached from the rest of the village.

We don't have a toilet. I go for open defecation [...] Now that I'm staying with my in-laws I feel less vulnerable but I'm still scared [...] If my husband was here it would be different. Nobody would ever assault me or call me with 'names' [...] They would respect my husband and me (Dakhinaveda_11)

8.4 Time scarcity, health and physical burden

A brief remark needs to be made on interlinkages between increased workload and health. It was pointed out before in this Chapter that, in extended households, women did not notice any change in workload after migration. In nuclear households, physical burden was rarely raised as a problem and was outweighed by the psychological burden. Yet, women who stay behind to take care of children and sick elders experience a further reduction of their leisure time, as they also have new tasks outside of the village. The links between health and leisure time were already discussed in Chapter 5 (section 5.3.3), however three additional aspects relevant to the adaptive capacity of the women who stay behind are worth to be highlighted here. First, there are possible links between time poverty and food insecurity. As Babita, 25-year-old, OBC, noted: *"it is very difficult for me to complete all the work because I'm alone. Sometimes I don't have time to take food"* (Khaita_11). Second, the lack of time undermines women's active participation in community groups, such as SHGs, which besides being pivotal for collective voice is also important to access financial credit. Third, while acknowledging that in the study sites women do not engage in paid work activities because of social norms, many left-behind women in nuclear households reported that even if they would not have time to work (even if they could).

Thus, migration can reinforce the gender division of labour and further affect, in turn, women's participation in paid work which most women value as important (Chapter 5, section 5.3.3). Finally, there is increasing evidence showing that time scarcity is directly correlated to mental health and that it contributes to exacerbate health inequalities (Strazdins et al., 2011).

8.5 Left behind women in hazard-prone areas: coping and recovering from shocks

Women who stay behind in nuclear households, as well as women in extended households alone with elders and children, face the greatest challenges during floods and cyclones. They have the whole burden of preparing the household (e.g. collecting water and firewood,

preparing the dry food etc.) and getting the children and the elders ready to evacuate. The responsibility of keeping everyone safe is described as ‘overwhelming’ and village solidarity emerges once again as a key factor (FDG11-D-W). Garima, 40-year-old, GC, whose husband is in Kerala lives with her two teenage sons. She tells her experience:

When there is a flood or a cyclone we evacuate to the main road. Our husband bought us a polythene sheet [...] That’s how we protect ourselves. I prepare everything by myself – the food, the firewood and the water. My neighbours helped me to safely reach the road with my children [...] They [neighbours] also help me when we are there, sometimes for two or three days. As I am alone with them and I am a woman they protect us⁶⁹ (Nuagan_16)

Widows may face similar challenges. Kabita, 55-year-old, OBC, describes her experience during floods:

The last time there was a flood I stayed here [in her kutchra house] with my daughter. We didn’t have dry food and since there is no man in the house no one could go to the market [...] We stayed for three days without food until life went back to normal and I could ask a neighbour to shop for us (Nuagan_07)

Like Garima, she also highlights how the solidarity and help of other villagers has been critical in her life. When her husband passed away she had four daughters to raise by herself and says that the villagers collected money several times to help them. Another important aspect emerging from Kabita’s quote is that women’s limited mobility could exacerbate vulnerability during climate hazards, especially if there is no male person in the household.

Finally, although I cannot generalise, I noticed that in households without male members (either migrant-sending households or widow headed households), the majority of the interviewed women preferred to remain in their house or stay in other people’s pucca houses during floods and cyclones rather than reaching the community shelter. This is an aspect that was not fully investigated during the fieldwork, however considering the issues raised in Chapter 7 (section 7.3.2.2) it seems legitimate to assume that the experience of

⁶⁹ Nuagan is the village without any community shelter (see Chapter 3).

the cyclone shelter could be particularly traumatic for women who are unaccompanied by a man.

While it is true that in some cases migration could reduce men's and women's vulnerability to extreme weather events, for example when remittances are used to build pucca houses, it was observed in Chapter 7 that in the study sites this is rarely the case. In migrant-sending nuclear households, women and children are potentially exposed to higher vulnerability to climate shocks than women in extended households, with or without migration. Community solidarity, as it has emerged throughout this chapter, is a key factor in reducing vulnerability and enabling adaptive capacity which can, albeit partially, compensate for women's lack of (or limited) capacities.

8.6 Conclusions

This Chapter has shown that the impacts of migration on the women left-behind are highly differentiated and change over time with multiple, direct and indirect, implications for their adaptive capacity. Age, caste, household structure, marital status and position within the household are some of the most prominent factors shaping women's experience of migration and, in turn, the challenges and opportunities that this poses for the enhancement of their adaptive capacity.

The discussion in this Chapter further confirmed that the implications of migration for adaptive capacity are gendered and profoundly shaped by social and power structures. It also revealed the need to investigate the migration-adaptation nexus accounting of the less tangible impacts of migration, including its social and psychological impacts. Failing to do so would overlook the complex interlinkages between migration, gender and adaptive capacity that result in highly differentiated and complex outcomes. Further, the findings discussed in this Chapter challenge simplified narratives of migration as adaptation that portray women left behind as a homogenous group and that build on binary interpretations of empowerment and disempowerment overlooking the nuances that sit at the nexus of migration and adaptation. The next final Chapter will further discuss these findings putting them in the context of academic and policy discussions.

CHAPTER 9. CONCLUSIONS

9.1 Introduction

This thesis has investigated the impact of migration on women's adaptive capacity in the areas of origin of migrants in the context of Odisha, India. The motivation for the study stemmed from concerns over the paucity of academic literature highlighted in debates about 'migration as adaptation', at the time when this study was conducted. Using intersectionality as an analytical lens and drawing on adaptation, migration and gender theories, this study sought to contribute to these debates by offering a nuanced understanding of the interlinkages between migration and adaptive capacity to climate and environmental change in the Mahanadi Delta.

At the heart of the investigation were three key research objectives each of which was the focus of a findings chapter: i) to understand gender relations and the way they shape power dynamics and social inequality (Chapter 5); ii) to investigate migration patterns, drivers and outcomes (Chapter 6); and finally, to iii) understand determinants and constraints of adaptive capacity (Chapter 7). Chapter 4 set the scene for contextualising and interpreting the research findings by providing an overview of the social, economic, environmental and agricultural context of Odisha and the Delta. The penultimate Chapter (8) brought together these three themes of investigation (power dynamics, migration and adaptive capacity), and discussed the implications of migration for the adaptive capacity of the women who remain behind in migrant households, highlighting the diversity of outcomes and experiences across multiple intersecting identities.

This concluding chapter seeks to place these findings into the broader academic and policy discussions around migration, gender and adaptive capacity, and to offer some policy recommendations and suggestions for future research. After this introduction, I summarise the key research findings associated with the three research questions (section 9.2). The in-depth discussion with relation to literature then follows (9.3), which in turn feeds into the next section on policy implications and recommendations (9.4). The final section concludes with some reflections on the study limitations and suggestions for future research (9.5).

9.2 Research questions revisited

This thesis attempted to gain a nuanced understanding of migration as adaptation in migrants' places of origin through the lens of social differentiation, with a focus on women. This section summarises the key findings linking them to the research objectives.

RO1. Understanding gender relations, power dynamics and underlying causes of inequality

This study showed that different manifestations of inequality based on gender, age, caste and other identities intersect to create context-specific dynamics of oppression and privilege which are constantly changing and evolving throughout one's life. Chapter 5, in particular, analysed the ways in which social and cultural norms shape the context in which multi-layered identity formations arise, and discussed how privilege and oppression are in turn constructed and are further maintained.

The focus of analysis was the household unit where intra-household power dynamics were put under the lens of intersectionality. In line with long-standing feminist scholarship, this analysis confirmed that households are dynamic heterogeneous units of decision-making and power. Given my interest in women in particular, the study revealed the ways in which intra-gender hierarchies were constructed, through the interplay of age, caste, social position within the household (e.g. mothers-in-law vs daughters-in-law), and whether they were or not mothers (for married women). As such, changes in the household structure (for example, when one or more family members migrate) and changes in individual identities and agency (such as when women become mothers, or as they age) shape women's bargaining and decision-making power in the household. The type of household is also important to consider in this context. The study found that women living in nuclear families have a little more opportunity to exercise their agency and gain autonomy as they do not have to contend on a daily basis with other family members they are not related to, like their counterparts who live in extended families. The interlocking of patriarchy with patrilineality, age and social position within the extended household produced a situation in which young daughters-in-law were ranked at the bottom of the social and economic household hierarchy, regardless of their caste. This creates a certain process of vulnerability which simultaneously positions them as the family members in charge of the majority of household chores and exposes them to multiple forms of subordination and restrictions (from male

and older female members of the household), including constraints on physical mobility outside of the household compound. These young women have also low levels of participation in women-led local community groups, such as Self-Help Groups (SHGs), even when they are formally members. Yet, these SHGs are hugely important in helping to strengthen women's confidence and self-esteem, as the finding from this research show. While living in a nuclear household may afford married women more autonomy than in extended households, such living arrangements are not favourable when it comes to the volume of work within the house, especially when men migrate. In men's absence, women are left to shoulder the burden of household chores on their own, as well as they often take responsibilities beyond the home. This often leads to time poverty and overburden for women with negative implications for their physical and subjective wellbeing, or for their ability to seize opportunities for empowerment (e.g. participate in community groups, or take up paid work).

The norms of patriarchy, and their implications for gender relations and women's empowerment were analysed in this research through the various stages of life showing that women are often defined and 'valued' in relation to men, first in their natal family and later through marriage and motherhood. In their natal household, the social institution of dowry and the norm of patrilocality have profound implications for women's education. Because the dowry is usually proportionate to the groom's status, households that cannot pay large dowries are discouraged from keeping their daughters in school. Girls' education is also not seen as a good investment for their family compared to boys since women will eventually leave their natal household. Women's productive and reproductive roles are entrenched in patriarchal power structures and are instrumental to maintaining women's subordination to men. Reproductive success is considered a responsibility of women whose presence in the household is perceived as more 'valuable' when they procreate sons. Failure to do so can lead to social marginalization, discrimination and domestic violence, as voiced by some participants of this study. The study also offered nuanced understandings of agency outlining that it can manifest in 'unexpected' ways, for example by complying with patriarchal norms to maintain harmony in the household or to protect caste.

RO2. Investigating socially differentiated migration dynamics and outcomes

This study engaged primarily with internal migration, an area of investigation that has often been overlooked in the field of migration studies, where concerns around international

migration dominate. Compared to international migration, internal migration may yield lower financial remittances, but it has the potential to impact a wider range of – often poorer – people, as was the case in this study. However, aside from caste or social class at the community level, who migrates within the household, who benefits from this migration and in what ways, are contingent on the interlocking dynamics of age, gender and social positioning within the household. In a patriarchal context such as that of the study sites in rural Odisha, men who are also expected to be breadwinners in the family, are almost always the main, if not sole, migrants in these households. In extended families, this task is usually for younger men. Women remain behind and support this migration project through their productive and reproductive labour in the villages of origin. More broadly, the environmental factors interact with these individual and household-level factors in both shaping decisions to migrate, as well as how this migration will in turn impact individuals, families, communities and the surrounding environment (Chapter 6). The evidence from this study confirms a complex, non-linear and dynamic relationship between climate change and migration, shaping movements along a voluntary-forced mobility continuum, as well as alongside (involuntary) immobility (Carling, 2002; Schewel, 2020).

The study shows mixed implications of migration in places of origin. At a household level, the findings highlight that migration can have both positive and negative effects on the household capacity to adapt to climate change and that the ‘effectiveness’ of migration as an adaptation strategy to reduce vulnerability to environmental risks is extremely context-specific and socially differentiated (e.g. between households belonging to different castes and classes). A combination of several factors including pre-migration conditions, migrants’ labour conditions at destination, the household structure (nuclear or extended) and the type of movement (short or long term, internal or international) shapes the outcome of migration. Chapter 6 includes examples of households that have reduced their exposure to climate risks through migration by, for example, using remittances to diversify their income and to build concrete houses that are more resilient to floods and cyclones. Nevertheless, other examples also included households whose vulnerability increased as they accumulated debts and adopted maladaptive behaviours in order to finance a migration journey (e.g. selling assets), which were not offset by remittances. Similarly, in other households the vulnerability increased post-migration through developing a dependency on remittances. Given that these are not sent regularly and are small sums in any case, they

proved to be insufficient for meeting the household's needs due to the precarious labour conditions and hazardous jobs of migrants at destination.

Zooming in on the intra-household dynamics, it is clear that the implications of migration are even more complex and heterogeneous and could be simultaneously positive for some members of the family and negative for others. This was the case even within a group of women from the same household, because women may have different experiences of migration depending on their identities and social positions within the family. The mobility of different family members leads to renegotiations of roles and responsibilities and changes intra-household power dynamics. The findings show that younger women in extended households can have less decision-making power following the migration of their husband, while mothers-in-law in the same household and at the same time, can increase their bargaining power and assume greater decision-making roles. Meanwhile, women in nuclear households fare better as they become *de facto* heads following the migration of their husband, which in turn translates into greater control over the use of remittances and household decision-making while their husband is away. Nevertheless, this is not a static situation and relations and positions are continuously renegotiated. Women in their late 30s or older, for example, may gradually overcome some challenges when their individual (e.g. growing confidence) and household conditions (e.g. children, especially sons, growing up) change. Migration can thus be inequitable in its outcomes between different social and temporal scales with important implications for the adaptive capacity of individuals and households in source areas. Further, individual and household adaptive capacity are intricately linked and thus considering these implications is key to evaluating whether migration is a successful adaptation.

RO3. Understanding differentiated determinants and constraints to adaptive capacity

In contrast to existing work, this study took a novel approach to the analysis of adaptive capacity by seeking to construct a bottom-up, empirical, understanding of the concept that reflects social differentiation and that is rooted in the local social contexts. In addition to identifying the factors that constitute adaptive capacity, this research sought to unpack the processes through which adaptive capacity is produced.

One of the main findings of this study is that adaptive capacity should be understood as a socially differentiated process rather than a fixed set of determinants. The analysis shows

that people identify adaptive capacity needs and priorities based on their risk perception which is, in turn, shaped by social roles and individual values. While women emphasized risks related to cyclones and floods whose impacts have negative implications for their caring responsibilities and closely intersect with gender and social norms, men prevalently highlighted risks related to sea level rise and salinity intrusion which affect agricultural production for which they are responsible. People's adaptation responses and their understanding of adaptive capacity needs are therefore deeply rooted in socio-economic contexts and reflect social differences. The study identified some key elements of adaptive capacity broadly related to livelihoods, water and food security, sanitation, housing, health, governance, disaster management and voice (see Chapter 7). It highlighted how these factors interact and shape each other, and how they differ between and within social groups. Barriers to adaptive capacity vary across gender, age, caste and marital status and range from lack of access to land and finance to lack of information and capacity to adopt climate adaptive agricultural practices or to find off-farm employment. Some of these constraints are entrenched in broader human development issues and structural inequalities that perpetrate vulnerability and further reduce the capacity to adapt of some disadvantaged groups. The discussion in Chapter 7 shows how a true understanding of adaptive capacity cannot be removed from social and cultural contexts. Upper caste women, for example, emphasized the importance of housing not only because of the wind- and water-proof qualities of concrete houses but also because it is socially unacceptable for them to sit in cramped cyclone shelters next to men of lower castes. Similarly, women placed a great emphasis on needs related to access to safe drinking water and sanitation and hygiene during floods and cyclones. Lacking access to these resources was described as putting a burden on women, especially women from nuclear households and younger daughters-in-law due to their social roles, thus disproportionately affecting their capacity to cope with climate risks. Issues related to land ownership that were profoundly unequal across intersecting gender, caste and age identities emerge as barriers to access safety nets and crop insurance, both of which are considered key to recover from livelihood and asset losses caused by weather events. The ability to express one's needs and being heard at household, community and local level emerges as one of the most critical aspects of adaptive capacity, yet it is also one of the most immersed in unequal power relations and shaped by interacting forms of privilege and oppression.

Adaptive capacity is neither fixed nor homogenous. The various elements of adaptive capacity interact with each other to enable, or further constrain, people's ability to adapt to climate change. For example, lack of access to land constrains access to finance which, in turn, limits the adoption of climate-smart technologies and/or access to safety nets and post-disaster insurance compensations. The study identifies some factors that reinforce such interactions, in both negative and positive ways. Education, for example, could facilitate access to information and awareness of institutions or policies that may improve access to other categories and compensate for deficiencies in some determinants of adaptive capacity (e.g. poor governance). Likewise, education can enhance self-confidence and one's ability to speak and advocate for their needs. Yet, as we saw earlier, it is boys not girls, who are favoured to be educated in poorly resourced households and lower castes have usually limited access to education. Social capital was found to be another key enabling factor of adaptive capacity. Friends and family networks are of vital importance to help people access resources. For women in nuclear households, social capital is essential to enable their mobility, thus their access to basic services, outside the village, and for their safe evacuation during disasters.

9.3 Discussion

Drawing on the findings summarised in the previous section, I reflect here on how this study engages with, and contributes to, existing theories and discussions in the fields of adaptive capacity, adaptation, gender and migration.

Adaptive capacity as a dynamic, socially differentiated process

This work has taken a critical stance towards those approaches that assess adaptive capacity as a static and monolithic set of determinants. It argues instead that adaptive capacity is a dynamic process rooted in deeply diversified contexts and shaped by intersecting identities, hence by individual and social attributes.

As discussed earlier in this thesis, most assessments of adaptive capacity describe it in terms of material resources, assets and capitals (Chapter 2). Drawing on the Sustainable Livelihood Approach (SLA) (see Chambers & Conway, 1992; Solesbury, 2003), such assessments categorise adaptive capacity into a list of determinants that relate to social, human and financial capitals, assets, technology and institutions (see Brooks et al., 2005; Morse &

McNamara, 2013; Pelling & High, 2005; Small, 2007; Smit et al., 2001; Yohe et al., 2007; Wright et al., 2012). Livelihoods-based assessments of adaptive capacity have been criticized for explaining it as a static, linear, concept and for failing to depict the interactions between the different determinants (Agrawal, 2009; Matthews & Sydneysmith, 2009; Mortreux & Barnett, 2017; Jiao & Moinuddin, 2015). While some frameworks acknowledge the interdependency of the determinants of adaptive capacity (e.g. Brooks et al., 2005; Tol & Yohe, 2007), the process through which adaptive capacity is constituted remains - to date - unexplored (Matthews & Sydneysmith, 2009; Jones et al., 2019). This is a gap that this study has aimed to address by challenging the view of adaptive capacity as a fixed list of elements that does not reflect the diversity of local contexts. This work has instead showed the interrelated and fluid nature of the elements of adaptive capacity, also demonstrating how they differ among and within social groups. Such complexity is rarely captured by livelihoods-based assessments that most often lead to a 'flat' and homogenous classification of determinants. In this regard, Matthews and Sydneysmith (2009:12) state that:

“[...] no set of mechanisms or determinants [of adaptive capacity], no matter how through the resulting matrix, is likely able to do more than generally assess what is essentially a social process of considerable complexity.”

In agreement with the above quote, the evidence from this study suggests that adaptive capacity is a dynamic, heterogenous and context-specific process. The results support the calls for research approaches to adaptive capacity that are process-oriented (Brooks 2003, Smit & Wandel 2006), informed by local-contexts (Yohe & Tol, 2002; Smit & Wandel, 2006; Vincent, 2007) and that recognize the heterogeneity of individual and community responses as well as the need to assess social differentiation (Carr & Thompson, 2014; Erwin et al., 2021, Ravera et al., 2016). I further contend that such approaches should include a bottom-up analysis at the local/community level to meaningfully understand the significance of adaptive capacity (what it is and what constitutes it) and the social processes within which it is embedded. Adaptation to climate change is local hence identifying the conditions that shape adaptive capacity should be done empirically from, and with, the affected communities. The need for empirical understandings and bottom-up approaches has been highlighted by several scholars albeit in the broader context of adaptation (Smit & Wandel, 2006; Vincent, 2007).

As mentioned, one of the main characteristics of adaptive capacity highlighted by this study is its heterogeneity. The use of intersectionality as lens of analysis exposed the underlying web of power and social structures that make adaptive capacity highly diversified. *Power* is often missing in conceptualizations and frameworks of adaptive capacity and tacitly ignored in adaptation processes even though power relations are central to defining gains and costs as well as whose needs are addressed (Nightingale, 2017; Taylor et al., 2022). This research has showed how power differentials shape the way resources are distributed and whose voice is heard at all levels of decision-making which undoubtedly influences one's ability to adapt (Chapter 7). Further, it points to the importance of addressing adaptive capacity as a complex socio-ecological issue through frameworks that recognize power and systemic inequalities as integral dimensions of the concept. The findings feed into feminist political ecology views of the human-environment relationship which is seen as socially constructed hence profoundly shaped by the interplay of power and the multiple social identities that people inhabit (see Campbell & Vasco, 2000; Elmhirst, 2011; Nightingale, 2011; Onta & Resurreccion, 2011; Rocheleau et al., 1996). Acknowledging that adaptive capacity is constructed through power and inequality is a critical step towards a more comprehensive understanding of the process.

It is, however, also important to put such understanding in the context of intersectional subjectivities and individual social attributes (Matin et al., 2018). This leads to another key point and contribution made by this research to knowledge around gender and adaptation. Inspired by feminist political ecologist scholars, I wanted to go beyond acknowledging power dynamics and understand further in-depth how the intersection of multiple identities, including gender, reinforces patterns of oppression and privilege. I also wanted to move away from binary analyses that conflate women into a monolithic category such as those applied in earlier ecofeminist women-nature views (e.g. see critiques in Jackson, 1993; Rocheleau et al., 1996). At the time this study started, the literature pointing to the need of adopting an intersectionality approach to climate adaptation was just emerging (see Carr & Thompson, 2014; Djoudi et al., 2016; Hackfort & Burchardt, 2016; Kaijser & Kronsell, 2014; Ravera et al. 2016; Thompson-Hall et al., 2016). While it has since gained traction generating an increasing number of publications (e.g. Amorim-Maia et al., 2022; Erwin et al., 2020; Rao et al. 2020; Rao et al. 2021), intersectionality remains limited in climate studies where there is a predominant use of single categories such as 'women' (Carr & Pascual, 2016; Garcia & Tschakert, 2022; Mikulewicz et al., 2023; Thompson-Hall, 2016). Selecting only one aspect

of identity, like gender, does not allow to unpack the dynamic power relations and complex social issues that make adaptive capacity so diverse. We have seen, for example, how the intersection of age and gender influences access to resources, education, institutions and decision-making. At the time of writing, the approach taken in this study is therefore still novel, especially in the context of adaptive capacity where gender and intersectional analyses continue to be rather limited.

The findings further feed into the growing body of literature on transformative adaptation advocating for adaptation processes that deliberately challenge power hierarchies and inequality which reduce the capacity to adapt in the first place (Morchain, 2018; Taylor et al., 2022). Similar to Görgens and Zievorgel's (2019) observations in the context of resilience and vulnerability, I argue here that adaptive capacity needs to be understood as a relational and socially constructed concept defined by the interactions between individuals, their social systems and the environment.

Outcomes of migration for climate adaptation: successful for whom?

With the aim to understand migration outcomes for women's adaptive capacity in source communities, this study has brought new empirical evidence of the complex interlinkages between migration and climate change. In particular, it adds new insights into literature and discussions around the contribution of migration to climate change adaptation by illustrating its intersectional nature. As recently highlighted by some scholars, despite the growing interest in migration as adaptation, the understanding of how and for whom migration is contributing to adaptation remains limited and understudied (Sakdapolrak et al., 2024; Szaboova et al., 2023). Assessments of migration as adaptation are dominated by neo-classical models that largely focus on remittances and material gains failing to grasp structural factors, such as inequality and power, that deeply shape migration outcomes (De Haas, 2012; De Haas, 2021; Bettini & Gioli, 2016, Kundu & Sarangi, 2007; Singh & Basu, 2019). Alongside emerging literature (e.g. Rao et al., 2020; Singh, 2019; Szaboova et al., 2023), this work demonstrates that the impact of migration for adaptation is highly diversified across and within households and generates important trade-offs between different individuals. In expanding the simplistic views of migration as a success or a failure to adapt (e.g. Black et al., 2011; Warner & Afifi, 2014; see critiques in Gemenne & Blocher, 2017; Ober, 2014; Singh, 2019), this research shows that the implications of migration for

adaptation are rather nuanced and highly differentiated by gender, age, caste, marital status and other intersecting identities. The findings highlight that even within the same household migration can have profoundly different implications for individual adaptive capacity corroborating the importance of unpacking intra-household dynamics to fully understand the migration-adaptation relationship (Bettini & Gioli, 2016; Cohen et al., 2016; Mitra & Rao, 2019; Singh, 2019). This is in contrast with the predominant approaches to migration as adaptation that treat households as monolithic units and women as a homogenous group. This work has therefore contributed to addressing an important gap in the migration as adaptation literature by providing empirical evidence of its gender and intersectional dimensions. It further aligns with recent discussions (see Sakdapolrak et al., 2024; Szaboova et al., 2023) pointing to the need to examine the impact of migration for adaptation beyond tangible outcomes (e.g. livelihoods, income, assets) so as to gain a better understanding also of social implications that are key in shaping adaptive capacity, as noted earlier in this thesis.

Gender analyses of the climate-migration nexus remain limited (Chindarkar, 2012; Gioli & Milan, 2018; Nightingale, 2017; Lama et al. 2021). Assessments of migration as adaptation, in particular, rarely recognize gender differences. When gender is factored in, women are portrayed either as 'victims' and more vulnerable in the absence of men – carrying the burden of increased responsibilities and workload – or 'virtuos' and empowered through the opportunities that may arise in decision-making and autonomy (Arora-Jonsson, 2011; Djoudi et al., 2016; Lama et al. 2021; Rao et al. 2019). Such dichotomy has led to an overgeneralization of the gender, migration and climate change debates whereby women are treated as a uniform category and the underlying processes that reproduce their vulnerability remain overlooked. Homogenising the experience of women neglects possible differences and can lead to misleading interpretations of gains and trade-offs of migration in the context of climate adaptation. As discussed above, gender does not work in isolation but is interlocked with other axes of differentiation hence the importance of intersectional lenses of analysis.

In agreement with scholars that have pointed to the dynamic and relational nature of gender, mobility and climate change (e.g. Lama et al. 2021; Nightingale, 2017), this work has sought to understand the interplay of all three in one frame contributing towards a conceptualization of the nexus that moves beyond static interpretations of vulnerability and adaptation. Inspired by Kabeer's conceptualisation of agency and empowerment (Kabeer,

1999) and drawing arguments from feminist political ecology (e.g. Blaikie, 1995; Campbell & Wasco, 2000; Elmhirst, 2011), the study shows the centrality of choice and agency as linking concepts in the analysis of migration as adaptation. It argues that the impact of migration for adaptive capacity should be measured not only against human and economic progress and conventional categories (e.g. resource, capitals) but also in terms of wellbeing and quality of life. Further, it shows the importance of understanding the underlying factors that shape one's ability to 'make strategic life choices' – defined as empowerment (Kabeer, 1999) – to identify the interlinked and differentiated effects of migration and adaptation processes. In examining whether migration is a successful adaptation strategy it is therefore key to question how it affects people's ability to make choices (de Haas, 2021) and lead the lives 'they have reason to value' (Sen, 1999). People's subjective needs and desires should be considered in the equation alongside material and objective needs. In relation to empowerment, an apparent positive outcome, such as increased decision-making power, should be understood as linked to the act of choosing (see Alkire, 2007; Ibrahim & Alkire, 2007; Kabeer, 1999, 2008) and embedded in social systems. We have seen, for example, that young women in nuclear households who gained decision-making power in the absence of their migrating husbands reported to be unhappy and overwhelmed. They explained that the new roles were imposed on them by necessities of life (rather than choice) and that they wished for their husbands to return. Such findings challenge oversimplified assumptions, common in migration as adaptation analyses, that equal increased decision-making and/or mobility with empowerment. In alignment with what is observed by other scholars, decision-making can be perceived as burdensome by women, especially in patriarchal societies, where challenging the status quo can hinder their social status and wellbeing (e.g. see Ahmed, 2020; de Haas & van Rooij, 2010, Kabeer 1997), and could, in the long-term, undermine, rather than enhance, their adaptive capacity (e.g. where challenging status quo of patriarchal social norms leads to social marginalisation) (Alam & Khalil, 2022). This leads to two considerations. First, the existing conceptualization of empowerment and agency in migration as adaptation discussions is oversimplified. It overlooks the influence of patriarchal and power structures, including in the internalization of social norms, and neglects the element of choice. Power, choice and agency are tightly knit and can operate in multiple and shifting ways, also through consent and acceptance of oppressive norms (Ahlborg & Nightingale, 2018; Nightingale, 2011; Kabeer, 1999). Second, gender analyses of migration as adaptation should pay more attention to women's own values and priorities as

opposed to imported external values (Kabeer, 1999), as also discussed earlier with relation to adaptive capacity being situated in people's values and goals.

A final reflection that should be made is on the dichotomization between places of origin and destination and migrants/families of origin that prevails in migration as adaptation discussions leading to binary, almost independent, interpretations of the nexus. Although this study has mainly focused on places and families of origin, the findings demonstrate that migration establishes a dynamic relationship between origin and destination (Chapter 6 and 8) suggesting that migration as adaptation should be understood along this continuum (also in Porst & Sakdapolrak, 2020; Sakdapolrak et al., 2015; Sakdapolrak et al., 2024; Szaboova et al., 2023). In this view, I would challenge generalized narratives that depict women left-behind in contexts of male-out migration as passive victims and argue instead that by staying behind, to look after family and livelihoods, women enable men's migration contributing to unleash its potential for adaptation. Migration as adaptation discourses should therefore acknowledge the interdependency between migrant and non-migrant family members and the complementary role of men and women rather than seeing them as autonomous entities that exist independently (Porst & Sakdapolrak, 2020; Rao et al. 2020). Moreover, they should recognize that moving and staying are complementary dimensions of human mobility and equal manifestations of agency as observed in migration literature (e.g. de Haas, 2021). This yields a vision in which staying behind women are active agents in the migration as adaptation processes and calls for more empirical research to explore, through an intersectional lens, how adaptive capacity is concurrently shaped through interactions between places of origin and destination.

Key themes that emerge from this research are that migration implications for adaptive capacity are unequal and highly diversified between and within households. Nuanced views of the migration-adaptive capacity relationship provide a more realistic picture of the complexity of such processes that are found to be mutually shaping and profoundly embedded into social systems. Simplistic and binary generalizations about either positive or negative migration outcomes for climate adaptation are therefore short-sighted and can lead to misleading interpretations of the nexus. Unpacking the structural factors and mechanisms that reproduce differentiated adaptive capacity and migration outcomes helps identify the conditions under which migration contributes to (or hinders) adaptation and for whom. The study generated evidence of how interconnected aspects of social difference,

including gender, caste, age, social position within the family and marital status, shape individual experiences of migration and adaptive capacity in complex ways. The initiative this study took years ago when it started, to explore the migration-adaptive capacity nexus through the lens of intersectionality, recognizing that these processes are dynamically entrenched in unequal social systems, remains original and contributes to filling a knowledge gap that continues to exist (as acknowledged in Cundill et al., 2021; Sakdapolrak et al., 2024). In addressing its main research objectives, this work has also generated empirical knowledge that contributes to literature on migration, gender and intersectionality in India.

9.4 Policy implications and recommendations

The results of this work generate some wider recommendations for migration- and climate change-related policy. Since this study began, global attention towards the linkages between climate change and migration has grown exponentially. The relationship between adaptation and human mobility and the role of migration as an adaptation strategy have been top topics of discussion in key global fora such as the International Dialogue on Migration (IDM), the Global Forum on Migration and Development (GFMD) and the International Migration Review Forum (IMRF). On the climate change front, migration and climate change discussions are gaining space in the Conference of Parties (CoPs) through dedicated climate mobility Pavilions (in 2022 and 2023), the work of UNFCCC mechanisms, such as the Task Force on Displacement, and the increased recognition of human mobility as a form of non-economic loss and damage discussed in the framework of the newly established loss and damage fund. At national and local level, governments are grappling with climate mobility challenges and are increasingly recognizing the potential benefits of migration for climate change adaptation. In the context of this evolving political scene, I would like to reflect on some recommendations for decision- and policy-makers.

Improving policy coherence and coordination in climate, migration and development policies

The complexity of the challenges at the intersection of climate change and migration requires holistic approaches and multisectoral coordination. This study highlights how migration, climate adaptation and development are closely intertwined and mutually

shaping processes. To avoid setting competing goals and to fully leveraging the potential of migration for climate adaptation, it is therefore essential to enhance policy coherence. Integrating human mobility in local, national and regional adaptation planning processes is of critical importance for at least three reasons. First, adaptation planning should consider the socially differentiated implications of migration for adaptive capacity and it should develop adaptation strategies that contribute to mitigate the risks of maladaptation (e.g. by providing tailored support to the people who remain behind or who are unable to move). Second, adaptation planning that is not cognizant of human mobility issues can unintentionally increase vulnerability and disrupt migration patterns (e.g. adaptation projects that influence the need or capacity to migrate by increasing inequality or redistributing vulnerability over a broader area). Third, integrating human mobility in climate policies is also relevant to capitalise on the potential of migration for climate adaptation (e.g. through remittances investments and transfer of knowledge and skills, opportunities for empowerment etc.). While national climate policies, such as National Adaptation Plans (NAPs) and Nationally Determined Contributions (NDCs) have begun to integrate human mobility considerations, references are still scarce and lack clear strategies (Mombauer et al., 2023). The National Action Plan on Climate Change (NAPCC) for India, for example, makes only one reference to human mobility that highlights the need for more research (Chandni et al. 2021). Migration policies should as well carefully consider the linkages between mobility and climate and environmental change, including the complex and less discussed issues outlined by this work and the socially differentiated implications of climate-related mobility (or immobility). This work highlights that the success of migration as adaptation is shaped by social structures and power asymmetries that are replicated when people move, both at source and destination. Although this study did not focus on migrants, it points out that when migrants' wellbeing is compromised by precarious jobs and living conditions, it has a knock-on effect on their ability to remit to their families which, in turn, may be exposed to increased vulnerability. Migration policies should therefore respond to the complex links between source and destination areas to mitigate the risks and harness the opportunities of migration for climate adaptation. Labour migration policies, for example, can play an important role in the context of adaptation when rights-based pathways for safe and regular migration are provided alongside decent work opportunities. Finally, development and climate policies need to build on complementarities and improve coordination. Climate policies that disregard local contexts and socio-economic, political and development processes risk to implement top-down strategies that fail to address the root causes of

vulnerability and that may increase inequality hampering development goals. An example is that of adaptation plans setting criteria to access climate-smart technologies that favour elites and increase inequality by further marginalising the most vulnerable (e.g. see examples in Eriksen et al. 2021). Likewise, development policies that do not consider climate and environmental issues can favour socio-economic development at the expenses of environmental sustainability. When development policies integrate a climate lens they can contribute to support both autonomous and planned adaptation by addressing new and existing vulnerabilities and barriers to adaptation. Strengthening coherence between development, migration and climate policies and the capacity of policy-makers to act on these intersecting challenges is key to make climate adaptation inclusive, equitable and people-centered.

Considering the trade-offs of migration as adaptation and its socially differentiated implications

This work has shown that migration as adaptation to climate change results in gendered trade-offs and uneven distribution of costs and benefits. While migration has the potential to improve the welfare of households and to leverage adaptation responses, it also leads to changes in roles and power relations with diverse implications for different individuals. As highlighted by this study, underlying causes of vulnerability and inequality play a key role in distributing benefits and risks related to migration with implications for people's adaptation. It is, therefore, essential that climate and migration policies acknowledge intersectional differences and act on mitigating the trade-offs of migration as adaptation. Making migration a successful adaptation strategy entails providing tailored policy support for the left-behind populations to simultaneously address the root causes of vulnerability, avert the risk of further marginalization and enable people to equally benefit from its potential. Policies that fail to recognize the differentiated outcomes of migration for climate adaptation and that narrowly focus on economic dimensions of migration (e.g. remittances) losing sight of social and cultural implications - also key for adaptive capacity- risk widening inequality and further exacerbating vulnerability to climate change. Social security programmes and community-level support, for example, are crucial to help mitigate gendered trade-offs that unevenly reproduce vulnerability and limit adaptation.

9.5 Limitations and future research

In this final section of the thesis, I reflect on some of the study's key limitations and suggest avenues for future research.

General limitations

Like with every study, this too is limited in the claims it can make. A number of methodological limitations have been discussed in the Methods chapter (Chapter 3). These included my limited time in the field which, while allowing me to open a small window into the rural communities I was researching, it limited my ability to fully immerse myself into the everyday life of the local community for prolonged periods of time, as fitting deeper anthropological studies. Moreover, as an outsider to the community and a non-speaker of the local language, I had to rely on both a local facilitator/mediator and a translator for access to the field, participant recruitment, mediation of relationships with my participants and the local community, and data collection. Clearly, this has likely impacted the quality of the data collected, not least as I was not always certain that nuances and key concepts had not been lost in translation, or that that local power dynamics and hierarchies did not influence participant recruitment. Subsequently, some of this will have likely spilled into my interpretation of results, including my interpretation of field observations. I addressed these concerns in the best ways I could under the circumstances, a detailed account of which is in Chapter 3. In line with feminist approaches to epistemology my aim here is to be fully transparent about these challenges, both to do justice to my interlocutors, and to give the reader ample information that will help them interpret my findings and assess the claims I make. My positionality vis-à-vis the people and the communities I was researching was not as a mere outsider, but situated in a field saturated with power – the power of being White, highly educated, normally living in a Global North country with all the set of privileges that comes with these, especially when working in a developing Global South country such as India, in rural areas often rendered destitute by the whims of climate events, where people cannot just pick up a ticket to anywhere. Being aware of this positionality from the start meant that I was constantly looking to reduce this power gap at every opportunity, although not always successfully. It is a concern the pangs of which I continue to experience even as I come to the end of this thesis, but one which I have turned into motivation in my fight for social (and climate) justice.

While dwelling too much on one's positionality risks turning into a naval gazing exercise, I use this opportunity to reflect on the limitations, things I could have done differently (or not), and lessons learnt, in the hope that in so doing, I can both be transparent in a feminist spirit, and inspire others to see the value of doing so.

Reflections on the use of intersectionality

Methodologically and analytically, this thesis sought to use an intersectional approach to understand the ways in which individuals and families are positioned differently in relation to each other and the environment that surrounds them, which in turn shapes how they participate in the process of adapting to climate change through mobility and immobility. When I started this research in 2014, the field of migration had engaged amply with gender, but not so much with intersectionality. Intersectionality was almost unheard of in the field of climate change adaptation, while the latter was generally disconnected from social justice literature. It was, thus, a novel approach, which was an amazing opportunity to contribute to, but which at the same time presented the challenge of operationalising intersectionality, especially in this specific context and vis-à-vis these sets of questions. A recurrent question that arises during the design of research methods in studies that apply an intersectionality lens is how many axes of difference should be considered and which ones are of relevance (Yuval-Davis, 2011). That was a question that I grappled with while developing the methodology for this research. Through the literature review and the pilot fieldwork, some categories such as gender, age and caste were immediately apparent to me as being key to shaping people's everyday lives and experiences. During the main phase of data collection, as my understanding of the research context deepened, new categories became visible to me. Women's social positioning within the household, for example, arose as key to shaping experiences of oppression or privilege. At other times, their marital status and motherhood became more prominent in shaping intra-household power relations. I therefore began to consider a wider range of categories of women as I was recruiting participants through the snowballing process, so that I could include as many experiences and voices in the research as possible. It was also partly for this reason that I sought to diversify the data collection methods, by including a range of tools from individual interviews with women alone, to observations, to community-wide participatory group discussions. Clearly, however, due to the limited time I spent in the field, as well as other logistical limitations, this operationalisation was not always successful. Similarly, the data analysis and interpretation

have at times slipped into the additive approach, especially when I move to discuss issues at the scale of the local community (as opposed to the household). In the parts of the research where this was done well, it has enabled us to see deep into the complexity of social reality, thus underscoring the importance of such a perspective for future research.

The challenge of analysing the intersection of multiple identities is compounded by two further factors. First, that such intersections are place and time specific, therefore also requiring a strong understanding of social, cultural, political and historical contexts (Hopkins, 2018); and second, that the researcher's own positionality can shape the results through their role in defining the categories and making visible the intersections (see Hopkins, 2018; Rodó-de-Zarate & Baylina, 2018; Rice et al., 2019; Bastia et al., 2023). Both of these factors can be limited due to lack of adequate resources that often affect research projects, including this one.

Despite these limitations, I have sought to critically interrogate and explore in more depth the broader category of 'woman' and unveil the different shapes this took in different situations for different women. These were individuals who were positioned differently in life, depending on their age, social position within the household, marital status, on whether they had children or not, all of which changed over the course of their life as they reached adulthood, married, aged, and became widowed. Their positioning vis-à-vis their male family and community members was important too, but was part of a broader field of intersections, rather than sole direction in which power relations were shaped. Using intersectionality, therefore, has made visible how experiences of oppression and privilege are rooted in social, cultural and political contexts and change over time, within and across social groups. It has pointed out that analysing migration and adaptation without understanding intersectional relations and social inequality only provides a partial, view of these processes. Situating the understanding of adaptative capacity within this lens is essential to develop climate policies and programmes that are just, inclusive and attentive to the needs of the most vulnerable.

Future research

There is now an increasing body of literature that uses intersectionality, not just in migration studies, but also in climate change research, especially with the linked perspectives of environmental and climate justice (Amorim-Maia et al., 2022; Mikulewicz et al., 2023, Kaijser

& Kronsell, 2014). This study provides an example of the importance of this approach, and how this is the right direction to follow. This call is even more imperative as an increasing volume of data shows the uneven and differentiated impact of climate change on communities around the world, with women one of the worst affected groups, particularly for those living in low-income countries of the Global South, and who have fewer mechanisms and resources to participate in adaptation processes. As many rural areas are experiencing large scale outmigration, not always connected to climate change impacts, there is a real risk of depopulation increasing the vulnerability of groups who remain behind, such as older people, children or the disabled. An intersectional approach that might focus on these groups has the potential to bring about a better understanding of the challenges they face and how best to address them.

While the stay in the field for this study was quite short, research funders are urged to fund longer-term fieldwork, and researchers are encouraged to dedicate more time to immerse themselves in the field, especially when the gap between them and the research communities is wide. Adopting a truly participatory approach with the local communities and local researchers, is not only more equitable, but it can also potentially offer higher quality data and results, that are fully grounded in the local context and communities. Consequently, the suggestions for policy makers are likely to also more closely reflect people's needs.

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APPENDIX A: Guiding questions for semi-structured interviews with villagers

- Information about the study and the purpose of the interview
- Information about confidentiality and anonymity
- Clarify their right to interrupt the interview and withdraw at any time
- Encourage to ask questions
- Oral informed consent (also about voice recording and photos)

The below are only guiding questions, not all questions were asked in all the interviews and not necessarily in this order.

[INTRODUCTION AND BASIC QUESTIONS]

Age

Education

Household composition

What is the main source of income in the household?

Do you have agricultural land? Is the crop only production for self-consumption?

[MIGRATION]

Who migrated in the household?

How long ago? /Why? /Where?

What is his occupation? How is his experience of migration?

How much money he sends? How often? To whom?

How is your life changed since your husband/son migrated?

How do you feel when your husband/son is away?

How do you feel when your husband/son is back? What does it change in your life and daily routine?

Would you like to migrate in the future or to join him?

[PERCEIVED ENVIRONMENTAL CHANGE]

What environmental changes have you noticed during your lifetime?

What are the climatic events that affect and concern you the most? Why?

What is the impact of such events on your life and livelihoods?

[COPING STRATEGIES]

What do you do when there is a flood/when you hear that a cyclone is approaching?

Do you leave the house? Where do you go?
How do you feel when there is a flood/cyclone?
What do you think you need to cope better with these events?
Have you ever been in the cyclone shelter? If so, can you describe your experience of the shelter?

[HOUSEHOLD DECISION-MAKING, ROLES, RESPONSIBILITIES]

Who usually takes decisions regarding selling/buying assets or family related decisions such as sending kids to school or dropping them out?
Do you participate in these decisions? Do you feel your voice is heard?
If you need to buy anything for yourself to whom do you ask? Do you feel comfortable?
How does your typical day look like?
Do you leave the village by yourself? If not, why and who accompanies you?
Are you part of any community group? Which one? Do you participate in the meetings? What does it mean to be part in a community group?
How do you borrow money? Are you concerned about your household debts?
Would you want to work outside the house? What type of job?

[FEELINGS, EMOTIONS]

(If migration) how do you feel to stay behind?
What are the main concerns in your life?
(If raised) What do you do when you feel emotional or overburdened?
How would you describe the relationship that you have with your husband?

[FUTURE]

How do you see your future?
What are your main priorities for the future?