A FRAMEWORK TO ENHANCE POST-DISASTER RESETTLEMENT PROCESS THROUGH ADAPTABLE BUILT ENVIRONMENT IN SRI LANKA

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Abstract

The 'global refugee crisis' has captured much of the world's attention in recent decades and has thus led to several consequent declarations of policy and policy changes. However, a rising number of internal displacements are occurring around the world each year without attracting much attention. As a result, resettlements are implemented by the concerned entities, particularly in the developing countries, in order to diminish the impact of the crisis. Nevertheless, large-scale resettlement schemes have often been criticised for their inability to meet the long-term aspiration of the communities. Accordingly, this research seeks to explore the potentials of an adaptable built environment to resolve the issue.

This research inquires the available institutional arrangements, namely the top-down approach and the bottom-up approach, to provide affordable solutions. Thus, attempt is made to propose a framework to enhance the 'post-disaster recovery' process, by identifying the gaps in the resettlement and proposing steps to resolve built-environment related issues within disaster-induced resettlements. As selection of a specific developing country would permit an in-depth understanding of the process of resettlement, Sri Lanka was selected for the proposed purpose of this research.

This study adopts a concurrent nested mixed method that follows a survey within a case study. The case study and the survey data were collected simultaneously in Sri Lanka from June 2016 to August 2016. The collected qualitative data was analysed using a template analysis technique to identify themes and patterns. The quantitative data was further analysed using the factor analysis technique in order to understand the underlying concepts.

The results show that the resettlement process in Sri Lanka has improved considerably since the time of 2004 Indian Ocean tsunami. Nevertheless, some gaps exist in current procedures, that arise from the top-down approach, besides issues inherent to such approach. Further, it was found that the involvement of the communities in the resettlement process has been minimal, and the expectations, needs, and obstacles of the communities are rarely addressed. Cross-case analysis showed that the needs and expectations of the communities vary with specific parameters such as type of disaster, involvement of host community, phase of resettlement, involvement of displacement, and voluntariness for the resettlement. The analysis further showed that several of the empirical findings replicate the findings in similar contexts reported in the literature for other developing countries.

The framework produced in the course of the study and presented at the end of the thesis is intended to enable the arrival at plausible means to overcome the gaps in the

resettlement process and the outcomes. The proposed framework is expected to benefit governments, policymakers and academics to overcome process-related and outcome-related issues that lead to resettlement failure. It is also expected to benefit funding bodies and non-governmental organisations to determine the best practices for fund allocation and resettlement design in future programmes.

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Dedication

I dedicate this piece of work to all who forced to flee their homes

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List of abbreviations

DIDR:	Disaster-Induced Displacement and Resettlement
DS:	Divisional Secretariat
IDMC:	Internal Displacement Monitoring Centre
KMO:	Kaiser–Meyer–Olkin
NBRO:	National Building Research Organisation
NGO:	Non-Governmental Organisation
ORG:	Outright Grant
RPC:	Regional Plantation Company
UDA:	Urban Development Authority

Chapter 1 : Introduction

1.1 Research background

Disaster events such as earthquakes, windstorms, landslides, floods, tsunami and conflicts are among well known causes that generate and aggravate homelessness (Dikmen & Elias-Ozkan, 2016). This is a critical issue, especially, for economically less stable countries. The steady growth in disaster-induced displacement and resettlement (DIDR) across the world is alarming in view of the need address the consequences and retain the socio-economic stability of the affected countries. In order to ameliorate the impact of displacements, governments and other concerned entities undertake resettlement activities on different scales. Large-scale resettlements are, however, often subject to criticism for providing only temporary relief without ensuring fulfilment of long-term expectations of the communities.

Based on the causes that deny the affected people the option to remain in their habitual residence, internal displacement and resettlement are broadly classified into three categories, namely development-induced displacement and resettlement, conflict-induced displacement and resettlement, and environment-induced displacement and resettlement (Maldonado, 2012; Muggah, 2008). Significant disproportion is evident in research and policy activities relating to the three types of displacements and resettlements. Development-induced displacement and resettlement research has a long lineage from the 1960s (Cernea, 1995; Muggah, 2008) while the other two show comparatively limited academic engagement. Further, this disproportion also extends to the policies and guidelines (Godamunne, 2012). Therefore, this research seeks to meet part of this shortfall by an investigation of conflict-induced and environment-induced displacements and resettlements. The term Disaster-Induced Displacement and Resettlement (DIDR) will be used henceforth to refer to both conflict-induced and environment-induced displacements and resettlements, with 'disaster' as an umbrella term to cover both conflicts and environment-related catastrophes (Robinson, 2003).

Betts (2009) argues that disaster-induced resettlements involve interventions are highly political and deny the affected community's option to remain. To some extent, one should concede that decisions made by the government effectively making the resettlement an involuntary act. Thus governments, especially in developing countries, assume responsibility for resettlement (Ganapati, 2016). Resettlement largely comprises a process of introducing to the displaced population a new built environment, which potentially redraws the social system owing to its links with other subsystems of the community. Given the complex nature of resettlement, it may be fairly assumed that the new built-environment induced by the displacement of the affected population would disturb the

equilibrium of the community make the community socially vulnerable. Thus, studying the role of the built environment in the process of recovery of displaced communities will be particularly relevant in this context.

Resettlements, especially programmes that follow a donor-driven approach, are often criticised for their failure to ensure adaptability for both the built environment and the people. This constitutes resettlement failure in two ways. Firstly, it involves project-related failures, mainly in poor planning, implementation, coordination, and participation. Secondly, it involves outcome-related failures, such as culturally inappropriate houses, inappropriate materials and technology, and failure to meet the needs and expectations of the community (Ganapati, 2016). Besides, donor-driven resettlements are subject to shortcomings such as identified lack of institutional coordination, weak planning and policy, inequitable distribution, corruption, inordinate construction delays, and financial mismanagement and misappropriation (Ahmed, 2011). A number of case studies conducted in Gujarat, India (Barenstein, 2015; Sanderson, Sharma, & Anderson, 2012), Nagapattinam, India (Jordan, Javernick-Will, & Amadei, 2015), Sri Lanka (Karunasena & Rameezdeen, 2010; Seneviratne, Amaratunga, & Haigh, 2016), Manjil, Iran (Badri, Asgary, Eftekhari, & Levy, 2006), and China (Cao, Hwang, & Xi, 2012) indicate that the overall process of resettlement in developing countries follows nearly the same pattern.

Institutional arrangements for the resettlement process, depending on the level of centralisation, fall into two categories, namely the top-down approach and bottom-up approach. These two approaches comprise two ends of a continuum, and each has its pros and cons. Resettlement implementation agencies often opt for one of them since a middle ground has not been identified that enables effective implementation. This makes a strong case for an empirical study to examine the disaster-induced resettlement dissatisfaction from the perspective of the built environment to identify issues relating to institutional arrangements.

1.2 Justification of the research

The International Displacement Monitoring Centre (IDMC, 2016) reported 27.8 million new internal displacements globally for the year 2015, which were induced by conflicts and onset of disasters. Supporting this, large-scale displacements has been rated by 750 experts as the most likely and impactful risk of the world in 2016 (World Economic Forum, 2016). Further, the Sendai framework for disaster risk reduction 2015-2030 that is declared by the United Nations prioritises "enhancing disaster preparedness for effective response and to 'Build Back Better' in recovery, rehabilitation and reconstruction" as one of the key actions. This is a recognition of the global growth in the numbers displacements

and resettlements. On the other hand, studies draw attention to enduring criticisms of large-scale resettlements for failure to harmonise with the communities in long-term (Andrew, Arlikatti, Long, & Kendra, 2013; Barenstein & Leemann, 2012; Gunawardena & Wickramasinghe, 2009; International Committee of the Red Cross, 2011).

Earlier studies provide indications as to why resettlements have often been criticised for not offering long-term satisfaction. Firstly, the potential of the built environment to ensure effective social mixing within and between communities has not been realised. Studies show that the resettlements are often seen only as a process of providing houses to the affected population (Comerio, 1998). Offering houses alone, however, cannot ensure the satisfaction of the people since the built environment is a system linked to the composition of a community. Thus, the basic conditions connected to the population's socio-cultural needs, which are at the core of long-term adaptability of the built environment, have often been overlooked.

Secondly, inadequate recognition of the role of the host community in the process of resettlement is identified as a factor in resettlement dissatisfaction. Where repatriation is not feasible for a displaced community, local integration is the only option. Hence, the acceptance of the host community is an essential element in shaping the community and for the success of any post-disaster resettlements, which is seldom addressed in a systematic way; and the perspective of the host community deserves recognition in both research and in practice (Brun, 2009). Thirdly, the institutional arrangement for resettlements is often a choice between the top-down and bottom-up approaches, as a suitable middle ground for effective implementation has not been identified. While each of the top-down and bottom-up approaches has its specific advantages and disadvantages, studies have generally not recognised the need for the evolution of a middle ground, addressing the issues from the perspectives of the provider and the beneficiary.

The literature further revealed that, over time, development-induced internal displacements and resettlements have attracted much interest in the research spectrum and thus been studied by many researchers. However, both man-made and natural disaster-induced displacements and resettlements have not received proportionate attention. In order to provide a durable solution to the stated problem, this and other earlier mentioned gaps in post-disaster resettlement studies need to be comprehensively addressed.

Accordingly, to enable an in-depth study, DIDR in Sri Lanka was chosen as the central theme. The justification for the choice are, firstly, that Sri Lanka has decades of experience in displacements and resettlements arising from both armed conflict and natural disaster

(Das, 2008). According to EM-DAT: The International Disaster Database (2016), 4,320,065 Sri Lankan people were reported as homeless from 1980 to 2014 owing to natural disasters. Further, a recent study by Habitat for humanity (2017) shows that over 18,000 houses were damaged owing to floods in Sri Lanka in 2017 alone. Ministry of Prison Reforms Rehabilitation Resettlement and Hindu Religious Affairs Sri Lanka (2017) states that 40,938 displaced persons remain to be resettled in the country. Further, built-environment and community adaptability issues have led to a slow recovery of resettlements, in Sri Lanka (Das, 2008; Manatunge, Herath, Takesada, & Miyata, 2009; Muggah, 2008; Perera, Weerasoori, & Karunarathne, 2012; Takesada, Nakayama, & Fujikura, 2009).

The research gaps referred to above lead to the research questions, "Why do post-disaster resettlements often end up in dissatisfaction?" and "How best can an effective recovery be achieved within the Sri Lankan post-disaster resettlement programmes through providing an adaptable built environment?" Accordingly, the following aim and objectives are developed to answer the research questions.

1.3 Aim and objectives

1.3.1 Aim

This study aims to propose a framework to augment the post-disaster resettlement process in Sri Lanka by identifying and recommending solutions for process-related and outcome-related gaps and barriers to resolve built environment related issues in resettlements.

1.3.2 Objectives

1. Explore the gaps in current procedures and policy requirements that are followed by the Sri Lankan government/ resettlement agencies during planning and implementation of resettlements
2. Compare and contrast both host and resettled communities' built environment related expectations and needs concerning resettlement
3. Evaluate the existing built environment related challenges and obstacles that are faced by the resettled communities and their host communities
4. Establish the gaps in the top-down procedures and bottom-up perceptions
5. Develop a framework to enable enhancement of post-disaster resettlement process through adaptable built-environment

1.4 Scope of the research

As stated at the outset, internal displacements are classified into three categories, namely development-induced, conflict-induced, and environment-induced (Maldonado, 2012;

Muggah, 2008). Typically, development-induced resettlements are funded by government or by international organisations and generally allow time for the people to plan and organise their resettlement by relocating their livestock, household equipment, food stock, and construction materials, as necessary (Lakshman & Amirthalingam, 2009). Moreover, development-induced resettlements have been well researched by several scholars who saw in it an injustice to the displaced population (Cernea, 1995; Robinson, 2003). Hence, this study pays attention to conflict-induced and environment-induced displacements and resettlements under the common term 'disaster-induced displacement and resettlement'.

For the purpose of this research, resettlement is identified as planned, involuntary, permanent relocation. The reason is explained in more detail in Section 2.1. Thus, the term resettlement will hereafter refer to planned, involuntary, permanent settlements. The most common classifications of resettlements are based on the proportion of assistance for housing, namely owner-driven approach and donor-driven approach (Andrew et al., 2013; Chang, Wilkinson, Potangaroa, & Seville, 2011; Karunasena & Rameezdeen, 2010). This study is confined to donor-driven resettlements as they are generally large-scale with the government or the donor agency assuming full responsibility with little or no reference to inputs from ground level stakeholders (Karunasena & Rameezdeen, 2010), and thus long-term adaptability issues are encountered mainly in donor-driven resettlements.

Reasons for resettlement dissatisfaction and its resolution can be approached and addressed from a variety of perspectives. This study poses the research problem from the perspective of the built environment, because involuntary resettlement invariably comprises a process of introducing a built environment to an affected population. This new built environment potentially redefines the social system as one interlinked with other subsystems of the community. The justification for this approach is further elaborated in Section 2.1.5. Taking into consideration the unique characteristics of the built environment, this study proposes solutions to improve the resettlement process from the perspective of the built environment, and as explained earlier in Section 1.2, the case-studies for the research were carried out in Sri Lanka.

1.5 Research method

The procedure for the empirical study in this research is based on the 'Research Onion' model of Saunders, Lewis, and Thornhill (2016), which is presented in greater detail in Chapter 3. This emphasis of the research is on the desirability of the built environment to ensure adaptability to the settlers. To understand the nature of the interaction between built environment and communities, it is essential to know how people perceive reality. In recognition of the prospect that there can be unknown realities that are not perceptible,

this research adopts 'critical reality' as its philosophical position. Based on this philosophical position, this study follows retroductive approach to analyse the pre-existing structures and emerging agency.

Considering the nature of the research questions, the concurrent nested-mix method is used in this study, which involves simultaneous conduct of both quantitative and qualitative data collection, but with greater emphasis on the qualitative aspect (Creswell, Clark, Gutmann, & Hanson, 2003). Case study and survey strategies were selected as formal and explicit procedures of action to achieve the aim and objectives of the research. The multiple-embedded case study design was chosen for the purposes of research for the key reason that there was need to confirm the assumptions identified in the literature review. Accordingly, a case of this study comprises a group of people representing communities that live or expected to live in disaster-induced permanent resettlement schemes in Sri Lanka. Further, the units of analysis for this study comprise favourable and unfavourable conditions, resettlement procedures, and expectations and needs.

Based on a predefined selection criterion, three districts were selected as study areas, namely Jaffna, much affected by conflict, Batticaloa, severely affected by the tsunami, and Badulla, highly prone to landslides, and nine cases were selected for the study. Altogether 73 semi-structured interviews were conducted among both resettled and host communities. Two parallel 5-point Likert-scale questionnaire surveys were conducted among resettled and host communities in Batticaloa and in Jaffna along with the case study interviews. The number of returned and usable questionnaires was 188, comprising 111 from resettled communities and 77 from host communities. Further, an expert survey and document review was conducted in order to identify the top-down procedures of resettlement.

Template Analysis, a form of thematic analysis, is employed in this study to analyse the interview data, in consideration of the epistemological position of the research. Accordingly, preliminary coding was organised into themes using NVivo software and structured into a template. The template thus developed was used across the cases. Data analysis of document review combined elements of content analysis and thematic analysis to elicit findings. Further, descriptive statistical methods were used to analyse the demographic data compiled from the questionnaires, which were further processed using MS Excel software. The Factor Analysis method was used to analyse the Likert-scale data. Validity and reliability of the study are ensured by employing multiple cases, multiple sources of data, and a structured protocol. The final framework of this research is validated for authenticity and credibility through another series of expert interviews.

The researcher followed above procedures to conduct the empirical study, guided by the recognition of how research gaps link to each objective and research procedure. Figure 6 shows how the research gaps are linked to each objective and the research procedures.

1.6 Structure of the thesis

Chapter 1 introduces the context of the present study. It presents the background of the research, research justification, aim and objectives and a summary of the procedures adopted.

Chapter 2 sums up the state of art and identifies the key concepts in the field of study to be explored in the present study. The chapter provides definitions of the key concepts, impact of resettlements, link between built environment and resettlement, justification for selecting Sri Lanka as the study area, types of institutional arrangement, and conceptual framework.

Chapter 3 describes the methods employed in the empirical study, and justifies the philosophical assumption, research approach, methodological choice, research strategies, time horizon, data collection and analysis techniques and validation procedures of this study.

Chapter 4 explains the procedures adopted, analysis and key findings of document review and data analysis of expert interviews in exploring current procedures and policy requirements that are followed by the Sri Lankan government/resettlement agencies in implementing post-disaster resettlements.

Chapter 5 presents and interprets the questionnaire survey data collected for identifying the obstacles and barriers faced by the communities in adapting to a new built-environment, and describes the procedures adopted, the analysis and interpretation of the data.

Chapter 6 contains the analysis of case studies exploring the built-environment related expectations and needs of both displaced and the host communities within the context of resettlement in three selected districts in Sri Lanka. Procedures adopted for the case study and background of the cases are presented and followed by analysis of the cases individually.

Chapter 7 extends the work in Chapter 6 for purpose of examining further the favourable and unfavourable conditions of the resettlement, procedures adapted, and expectations and requirements of the beneficiaries across cases. Attempt is made in this chapter to explore possible generalisations and to identify common variables across cases.

Chapter 8 presents the findings of the empirical research by comparing the results of the questionnaire survey, expert interviews, document reviews, and case studies, and proceeds to describe the underlying mechanism of resettlement dissatisfaction, and proposes a strategic level framework to augment the resettlement process.

Chapter 9 presents the salient conclusions of the study by summarising the research context and the problem and research findings. It also identifies the contributions of this research to the theory and practice of resettlement, limitations of the research, and further research prospects.

1.7 Summary and link

This chapter comprising the introduction to the research has explained the context of the research, research justification, aim and objectives and the summary of the procedures adopted. The chapter that follows explains the state of art, critical arguments and key concepts of the explored field of study.

Chapter 2 : Literature Review

Chapter 1 explained the outset, aim, objectives, scope and justification of the research. The present chapter sums up the state of art and identifies the key concepts in the field of study to be explored in the present study. The chapter provides definitions of the key concepts, impact of resettlements, link between built environment and resettlement, justification for selecting Sri Lanka as the study area, types of institutional arrangement, and conceptual framework. To compile the said topics, a systematic search of several peer-reviewed journals, conference papers, books, and official reports was performed. A combination of key words including (displacement* or resettlement*, relocation*, migration*) AND (built environment*, adaptability* housing*, infrastructure*, location*) AND (disasters*, conflict*, environment*, communities*, Sri Lanka*) were used to identify relevant literature. The search focused on resettlement process, procedures, and issues related to built-environment.

2.1 The Concept of 'Internal Displacement and Resettlement'

'Internal displacement and resettlement' studies have been an active research field of anthropologists and sociologists since the early 1960s (Cernea, 1995). The field has since matured and retains a wealth of knowledge cutting across disciplinary boundaries. In matured fields of research, terms are coined a new or used in meanings different from everyday usage to refer to concepts and phenomena to enhance clarity or precision in communications on the subject (Quarantelli, 1995). But, as in the case of many other research terms in this field of study, scholars have over time assigned differing meanings to the terms 'Displacement' and 'Resettlement'.

In everyday language, the term 'displacement' generally means physical relocation. To emphasise the involuntariness arising out of the lack of an option to remain, scholars added the term 'forced' to displacement in early 1990s (Cernea, 1995). Later, voluntary relocation was termed 'migration' and involuntary relocation was termed 'displacement' (Muggah, 2008). However, the term 'displacement' is currently used to explain involuntary physical relocation with many other characteristics including temporariness (Coughlan & Hermes, 2016). Further, the term 'forced migration' is also in use to describe nearly the same term 'displacement' (World Economic Forum, 2016).

On the other hand, since the late 1960s, the term 'resettlement' is described as a planned relocation of population with varying degrees of assistance (Chambers, 1969). Over time, this term has been substituted with many other terms such as 'settlement', 'relocation', and 'assisted migration' (Muggah, 2008). However, Scudder (1973) distinguished the term

'resettlement' from other terms based on the involuntariness that involves in the process. Further, Muggah (2008) added permanency as a character to this term. Accordingly, resettlement can be defined as a planned, assisted, and permanent relocation of displaced population.

Typically, displacement and resettlement take place following an external shock. Scholars classify this external shock into three categories, namely, development projects, conflicts, and environmental disturbances (Maldonado, 2012; Muggah, 2008). However, Betts (2009) argues that, solely these external shocks do not trigger displacements, but are extended to political decisions that revoke the population's choice to remain. Despite claims of political intention, the resettlements are neither avoidable nor justifiable at times.

Table 1 shows the working definitions of the key terms discussed in this section.

Table 1: Working definitions of the key terms

Term	**Definition**
Displacement	Temporary and involuntary physical relocation of population
Involuntary relocation	Relocation after a political intervention that negate the right of the population to remain in its habitual residence
Migration	Voluntary physical relocation of population
Resettlement	Planned, assisted, and permanent relocation of population

2.1.1 Why 'Internal Displacement and Resettlement' Matters?

The concepts of displacement and resettlement are discussed in two different scales in the literature based on whether the population crossed international boundaries or not. Involuntary population relocation that falls within national boundaries is termed as 'Internal displacement', and that beyond the national boundaries is termed as 'Refuge/asylum seeking' (Lang & Knudsen, 2008). The International Displacement Monitoring Centre (IDMC, 2016) reported 27.8 million new internal displacements globally for the year 2015, which were induced by conflicts and onset of disasters. Supporting this, large-scale displacements has been rated by 750 experts as the most likely and impactful risk of the world in 2016 (World Economic Forum, 2016). Although prominent internal displacement issues do not come to light as much as refugee issues do, this growing trend of internal displacement has redrawn the stability and resilience of the respective countries and

alarmed the governments to address the consequences (World Economic Forum, 2016). These consequences have been discussed in the traditional displacement theories in terms of economic, geographic, and demographic issues of the displaced population (Lee, 1966). However, more recent literature emphasises the need for taking measures based on multidisciplinary perspectives. Cao et al. (2012) describe displacement as a 'heterogeneous and multi-faceted' experience, which according to Lakshman and Amirthalingam (2009) among others varies with the cause for displacement, stability, and resilience of the population concerned. However, in general, displacement splinters the social structure of the affected community and leaves it vulnerable (Maldonado, 2012). Thus, the next section explains the impacts of displacement on the community.

2.1.2 Triggers of internal displacement and resettlement

Internal displacement and resettlement are broadly classified into three categories based on the likely causes that negate the right of the population to remain in its habitual residence. They are namely development-induced displacement and resettlement, conflict-induced displacement and resettlement, and environment-induced displacement and resettlement (Maldonado, 2012; Muggah, 2008).

The term 'development-induced displacement and resettlement' refers to situations in which a community is forced to leave its habitual residence by the state to establish large-scale development projects such as the construction of a dam or a reservoir, road development, conservation programmes, building of a hospital or a school, irrigation projects, and energy generation (Betts, 2009; Cao et al., 2012; Cernea, 1997). Although development projects are generally meant to reduce poverty, protect the environment, and promote the economy of the country (Robinson, 2003), several scholars see in this an injustice to the displaced population (Cernea, 1995; Robinson, 2003). As a result, international guiding principles have been developed which emphasise and demand evidence of compelling and overriding public interest to justify the decision of the government (United Nations, 2004).

The term 'conflict-induced displacement and resettlement' concerns situations in which a community leaves its residence to escape civil war, terrorism, foreign intervention, political violence, genocidal state and/or rampaging militias (Lischer, 2007). The term 'environment-induced displacement and resettlement' covers situations in which people relocate in the face of climate change, island sinking, tsunami, flood, hurricane, food insecurity, and the like (Betts, 2009).

Scholars argue that, irrespective of the triggers, displacement and resettlement affect people similarly even after their physical assets have been completely recompensed

(Cernea, 1995; Maldonado, 2012; Sharma, 2010). This, however, is not always the case in instances such as where the community is mentally prepared for displacement and resettlement. Obvious cases would include development-induced displacement and resettlement. Since, typically, development induced resettlements are funded by government or international organisations and often allow time for the people to plan and organise their resettlement by relocating their livestock, household equipment, food stock, and construction materials, as necessary (Lakshman & Amirthalingam, 2009). Often it is direct resettlement without causing displacement. On the other hand, conflict and environment-induced displacements are sudden and generally unexpected events. Further, they require urgent and substantial attention as they involve vulnerable people affected by unpleasant events. Consequently, conflict and environment-induced displacement and resettlement allow little time and resources for properly planned execution.

Further, a considerable disproportion is noticeable in the researches and policies on the three types of displacement and resettlement. Development-induced displacement and resettlement research have a long lineage from the 1960s (Cernea, 1995; Muggah, 2008) while, the other two types show relatively limited academic engagement. Further, this disproportion extends to the policies and guidelines as well (Godamunne, 2012). Thus, to address this gap, the present research focuses on conflict and environment-induced displacement and resettlement. Henceforth, the term Disaster-Induced Displacement and Resettlement (DIDR) will be used to address both conflict-induced and environment-induced displacements and resettlements, with 'disaster' as an umbrella term covering conflicts as well as environment related catastrophes.

2.1.3 Disaster-Induced Displacement and Resettlement (DIDR)

The study of disaster advanced as a matured field of research and the application of the term 'disaster' has been made distinct from its usage in everyday language to explain sophisticated concepts (Quarantelli, 1995). Over time, the term 'disaster' has undergone a paradigm shift from its use to explain a duplication of war, to characterise social vulnerability and state of uncertainty (Quarantelli, 2005). In the late 1990s Combs, Quenemoen, Parrish, and Davis (1999) defined disaster as 'a time and place specific event that originates in the natural environment and resulting disruption of the usual functions and behaviours of the exposed human population' (p.1125). This definition, however, explains disaster as a natural event and fails to reflect the severity of the disruption. Later in 2009, United Nations International Strategy for Disaster Reduction (UNISDR) extended this definition as 'a serious disruption of the functioning of a community or a society involving widespread human, material, economic or environmental losses and impacts, which exceeds the ability of the affected community or society to cope using its own

resources' (UNISDR, 2009, p. 9). This definition implies that any event, whether natural or manmade, that causes disruption and puts a community in a situation in which they need external resources for recovery, is a disaster. Thus the more recent definition includes a wide range of events and clearly identifies the severity of the events.

Based on this definition, disasters may be classified into two major categories, namely, natural and manmade disasters (Robinson, 2003). On the other hand, another school of thought questions the naturalness of disaster events since disasters are often inherently triggered by human interference (Cannon, 1994). Despite more specific recent classifications into geophysical, meteorological, hydrological, climatological, biological, extra-terrestrial, industrial, transport, and miscellaneous disasters (EM-DAT: The International Disaster Database, 2015), the earlier classification is still relevant as all of its subcategories (see Table 2) explain the urgency for displacement. Further, it endorses covering both conflicts and environment related catastrophes by the term 'disaster'.

Table 2: Classification of disasters

Natural Disasters	Sudden impact disasters	Flood, earthquake, storm, volcanic eruption, landslide, tsunami
	Slow-onset disasters	Drought, famine, environmental degradation, deforestation, pest infestation, desertification
	Epidemic disasters	Cholera, measles, dysentery, respiratory infections, malaria
Man-made Disasters	Industrial/technological disasters	Activities that lead to pollution, spillage of hazardous materials, explosions, and fires
	Complex emergencies	War, internal conflict, human rights violation

Source: (Robinson, 2003)

The above sub-classification enables one to establish the time scale associated with each disaster and displacement. Such establishment would provide insight for better planning and implementation of the resettlements. Accordingly, the above five sub categories are re-grouped under two broad themes based on the involvement of displacement before resettlement, namely, disasters that induce immediate displacement, and disasters that cause eventual displacement (see Figure 1). Sudden impact disasters and complex emergencies are location specific, and trigger immediate displacement and resettlement, while epidemic disasters and industrial/technological disasters trigger either immediate or eventual displacement depending on the severity of the event and consequent

resettlement. Slow-onset disasters, as said earlier, cause resettlement and seldom displacement.

Immediately following a disaster-induced displacement a community will undergo resettlement as a process of recovery comprising efforts to restore the displaced community's equilibrium level from different perspectives.

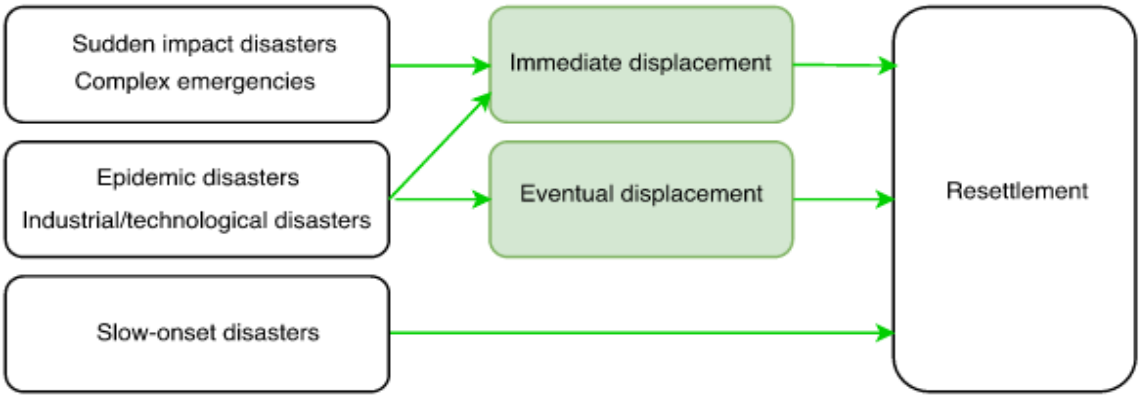


Figure 1: Disaster types and urgency for displacement

2.1.4 Community Resilience

Generally, a community is defined as a group of individuals who share certain values and political, religious, social, and/or geographical similarities (Slack, 1998). Herein, the term 'community' represents a group of individuals who share the same geographical location, while displacement signifies 'physical' relocation. Proag (2014) identifies the community as a social system built upon several interrelated subsystems. The system loses its equilibrium when it faces a substantial external shock affecting its structural, relational and institutional makeup (Hirsch, Levine, & Miller, 2007). Displacement is one such shock that could redraw the equilibrium of a community. Thus, stability is essential to any system, which is the ability to return to an equilibrium state after a temporary disturbance (Holling, 1973, p. 17). On the other hand, the term 'resilience' is largely used to express the ability of systems to recover. This term is defined differently in different fields of study. Generally, it is identified as the capacity of a system to absorb a disturbance and retain the same function, structure, and identity while undergoing changes (Wilson, 2013). Holling (1973) was the first to embrace the concept of resilience in ecology, which has since been adapted in other fields.

Resilience of a community to an external shock depends upon various networked resources such as economic development, social capital, community competence, and information

and communication (Sherrieb, Norris, & Galea, 2010). Among these, economy is among major systems that undergo severe consequences after disaster and/or displacement. In-depth studies on economic resilience mostly concern ecological economics (Perrings, 2006). Attempts have been made to extend studies on ecological economics to general socioeconomic domain, though several scholars argue that it does not provide any additional insight (Rose, 2009).

The economic loss due to disasters and displacements is largely measured in terms of damage to property, loss of production of goods, damage to capital stock, and losses to businesses by mainstream economic theorists (Park, Cho, & Rose, 2011). Cernea (2003), on the other hand, argues that despite the compensation for lost assets, resettled populations end up impoverished owing to dispossession, income loss and economic disruption. Further, the resettled community has to recuperate the time lost owing to displacement to catch up with the host community by accelerating economic development. Resettlement implementation agencies often neglect this aspect during the planning phase of resettlement.

Another major system that undergoes severe consequences after disasters and displacements is the social system of a community. These consequences may variously affect the making of the community, depending on its social resilience. Social resilience is the coping mechanism exhibited by communities when they face external disturbances (Shaw, Scully, & Hart, 2014). Marshall and Marshall (2007) define the social resilience of a community in terms of its perception of risk in approaching changes, its ability to plan, learn and recognise, its perception of the ability to cope with change, and its level of interest in adapting to change. Further, social resilience also includes the cultural and environmental features of the communities as well (Nirupama, Popper, & Quirke, 2015). A community's level of recovery largely depends on its social resilience. Thus, possessing vibrant leadership, shared goals and values, established institutions, positive socio-economic trends, constructive external partnerships and linkages, and adequate resources, would enhance the social resilience and assist speedy recovery. However, addressing all components of a community's integrated system is complex since the equilibrium performance of a community is difficult to determine.

While Proag (2014) in his study treats the equilibrium of a community as a steady state (see Figure 2), Cox and Hamlen (2015) argue that the performance of a community is not an outcome but a process so that the equilibrium state continuously changes with time and cannot always be seen as a steady state. Berkes, Colding, and Folke (2003) proceed to argue that the equilibrium of a community within a particular time span cannot be a single steady state but a set of several steady states, each of which can be the equilibrium of a

subsystem of a community, such as the economy, social status, culture and built environment. Accepting the arguments of Berkes et al. (2003) and Cox and Hamlen (2015) would impel us to assume that the performance of a community is not an equal representation of all individuals of the community. It thus gives rise to complications in addressing the disturbance to the equilibrium caused by the event of displacement. It would seem that attending each subsystem individually may simplify the process. However, since the interrelated subsystems of a community do not function in isolation (Hirsch et al., 2007), restoring the equilibrium level after displacement is more complex than it would appear. Among interrelated subsystems of a community, this study attempts to address recovery from the perspective of the built environment. The section that follows justifies the choice.

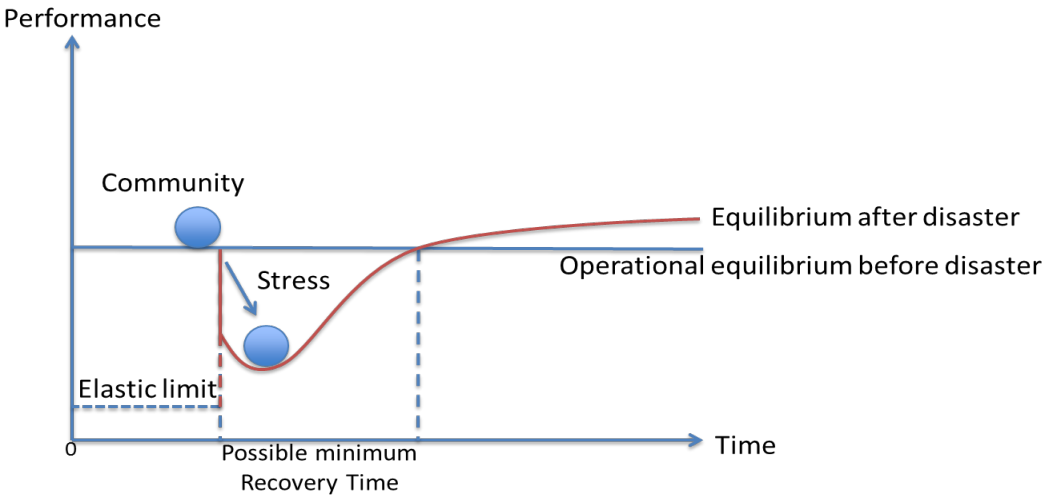


Figure 2: Equilibrium of a community

2.1.5 Impact of Displacement and Resettlement on the Built Environment

Despite being among interrelated subsystems of a community, built environment is in itself a system with unique characteristics as it shares the boundaries of social and natural environments (Moffatt & Kohler, 2008). Unlike the built environment, which is a man-made 'physical' system with a tendency to deteriorate as the community population grows with time, all the other subsystems are typically outcomes of self-organisation, social learning, and functional persistence of a community (Zaidi & Pelling, 2015). However, it becomes a subsystem of a community as it is shaped by the interaction of the people (Moffatt & Kohler, 2008). Considering this complex nature, it is fair to assume that the new built environment introduced by displacement to the concerned population may disturb the equilibrium of the community and lead to vulnerabilities. Thus, understanding the role of

the built environment in the recovery of the displaced community is of particular relevance to the present study.

The position of Betts (2009)'s argument, as discussed in Section 2.1, is that displacement involves highly politicised interventions which cancel out the choice to remain. To some degree, it is true that the government decisions make relocations less of an involuntary act, particularly in developing countries, where governments assume responsibility for resettlement (Ganapati, 2016). Resettlement is also a process that introduces new built environment for the displaced. This new built environment potentially redefines the social system as one interlinked with other subsystems of the community. However, following a fundamental change in the system, restoring the earlier equilibrium is almost impossible. Based on that assumption, ways to determine the success of resettlement are discussed, however, superficially in some of the literature. Failure in terms of built environment has been recorded based on the inappropriate house design (Andrew et al., 2013; Barenstein & Leemann, 2012), insufficient infrastructure (Gunawardena & Wickramasinghe, 2009), and inappropriate new environment (Foresight, 2011; Gunawardena & Wickramasinghe, 2009). Further, the economic status of the displaced community (Cernea, 1995), bureaucratic tendencies of the government (Muggah, 2008), and issues of discrimination (International Committee of the Red Cross, 2011) also are recorded as reasons for failures linked with the change in built environment.

On the other hand, when the built environment is concerned, the most overlooked aspect of understanding and determining the success of the resettlement is the role of host community. Herein, the host community is defined as the community amid which or in whose neighbourhood the displaced people are resettled (Kabra & Mahalwal, 2014). The host community comprising a different social system shares the built environment of the displaced community. As stated in the first paragraph of this section, the built environment is interlinked with all the subsystems of a community. A sudden change in the pattern of interaction with the built environment would have an immediate effect on the stability of the host community. Consequently, both the communities will suffer stress in adapting the new built environment. Chambers (1986) describes the host community as 'hidden losers' for the reason that, when recovery is considered, they are seen only from the displaced populations' perspective. Though, to conceptualise recovery, understanding the nature of displacement and resettlement is essential.

2.2 Dimensions of recovery

Four phases of post-disaster recovery are well-established and often repeated in disaster related literature. They are emergency response and relief, recovery and reconstruction,

mitigation, and preparedness (Berke, Kartez, & Wenger, 1993; Joshi & Nishimura, 2016). These phases are considered sequential and expected to follow the given order. Cronstedt (2002) considers this to be an out-dated concept, for the reason that, it creates an artificial barrier between the phases and leads to an 'over the wall' treatment (see Figure 3). Cronstedt (2002) also points out each phase is planned and treated separately while giving the same weighting to all four phases. On the contrary, Ganapati (2016) notes that views expressed immediately after the disaster are often not sustain until the end of the process. However, there is evidence that each phase overlaps and connects to every other phase. Thus, for instance, preparedness for future disaster should be developed during the course of recovery and reconstruction, and the multifaceted nature of the recovery process has to be recognised in the actual planning and needs to be followed accordingly.

Moreover, the phases of recovery involve different tasks with weightage depending on the political decisions made, including prohibition of reconstruction in any specific landscape. In such situations, the recovery and reconstruction phase is particularly critical as it involves the creation of an entire new built environment for the displaced population. This further varies depending on who undertakes the responsibility for any phase.

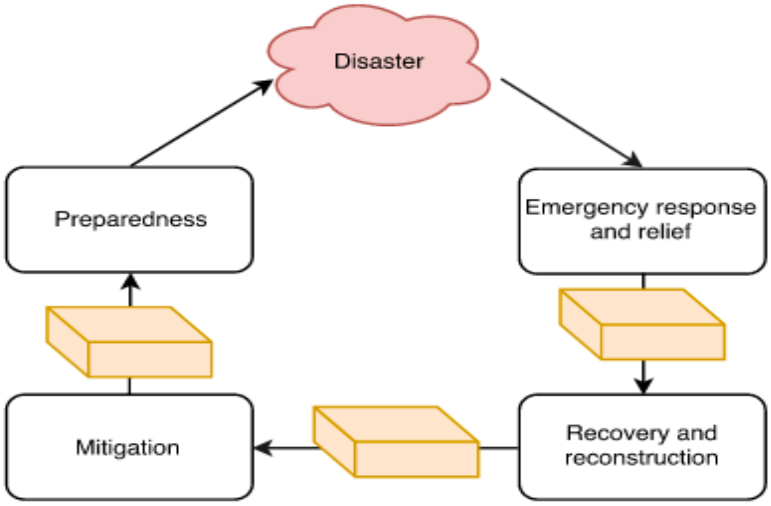


Figure 3: Phases of disaster recovery

Generally, governments of developed countries such as the United States do not reconstruct private houses (Ganapati, 2016). But governments of developing countries assume the responsibility for large-scale housing reconstruction (Jigyasu & Upadhyay, 2016) for the reason that, the people who are affected by displacement often represents the poorer segments of the society. Consistent with this view, Cannon (2008) considers all disasters as 'socially constructed' since vulnerability to disaster is an outcome of poverty. Therefore, mixing different recovery phases such as mitigation and preparation strategies

in the process of large-scale housing reconstruction is fundamental. Ganapati (2016) highlights this 'over the wall' approach as among reasons for resettlement failure.

As discussed in Section 2.1.5, indicators or measures for the success of a resettlement have not been clearly defined in related studies. However, the most common and frequently studied risk of these large-scale resettlements is the dissatisfaction to different degrees expressed by the beneficiaries (Dikmen & Elias-Ozkan, 2016). Dissatisfaction has been observed and recognised in many resettlement schemes around the world (Barenstein, 2015; Jigyasu & Upadhyay, 2016; Muggah, 2008; Oliver-Smith, 1991). Although, it is linked with all sub systems of the community, the built environment plays a major role in the process of recovery and the success of the resettlement. Thus, the next section explains the role of built environment in the process of recovery.

2.2.1 Role of built environment in the process of recovery

A built environment is a man-made surrounding that encompasses patterns of human activity (Lawrence & Low, 1990). Human beings can adapt to any built environment based on their lifestyle provided that certain basic conditions are fulfilled. Jigyasu and Upadhyay (2016) identify two basic conditions as favourable typology of house design and favourable location within the land plot. Further, the built environment also evolves and modifies itself constantly to satisfy the changing needs of its people (Barenstein, 2015). While that is foreseeable, often the basic conditions connected to the population's socio-cultural needs, which are the core for the long-term adaptability of the built environment, have often been overlooked. It is also true that, resettlements following a disaster encompass considerable and unavoidable differences compared to conventional methods in the layout, house design, building materials, and construction processes with those for conventional situations (Jigyasu & Upadhyay, 2016). However, providing the basic positive conditions for people to adapt to the new built environment lies at the core of the sustainability of the resettlement.

These basic positive conditions are illustrated in the traditional migration theory of Lee (1966) as a pulling factor for migration (see Figure 4). Lee (1966) further explains that each place has its own characteristics to hold and repel people. For example, good weather holds people and bad weather repels them. Also, there are some characteristics that attract a certain group of people but repel another. Therefore, basic conditions should be positive for the whole displaced population for any type of resettlement to succeed.

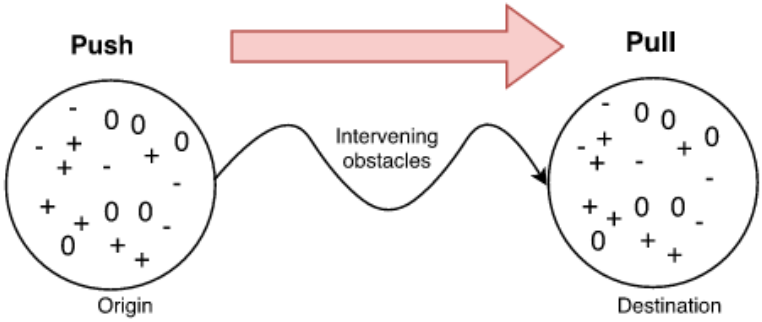


Figure 4: Push and pull theory of migration
Source: (Lee, 1966)

In the context of resettlement, which is involuntary in nature, the government or the relevant authorities often select the place of destination. Therefore, the place of destination does not necessarily pull the community towards it. Consequently, the community ends up in a clump of obstacles if the place of destination does not provide the basic positive conditions. Lee's migration model is modified to illustrate this condition (see Figure 5).

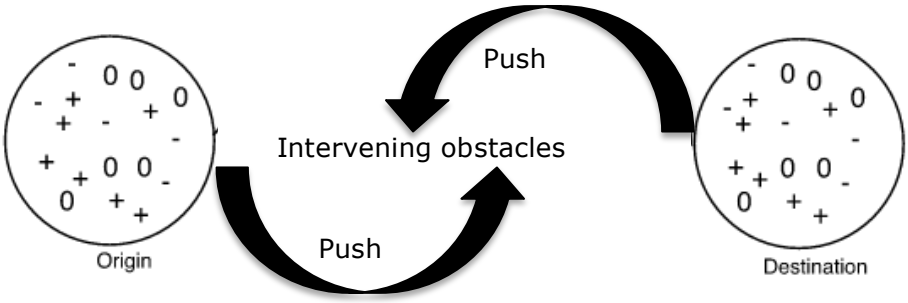


Figure 5: Modified migration theory for resettlement

However, identifying the relevant positive conditions at the right time is often challenging for the government as well as donor organisations as the focus is mostly on the speed, quality, and cost effectiveness of construction, and hazard mitigation (Jigyasu & Upadhyay, 2016). Further, the level of assistance given, and the type of settlement (rural/urban) also play a key role in providing basic positive conditions. However, the primary aim of any resettlement is to provide houses for the displaced people, as houses make up 60-70% of the total building stock of the whole built environment, where an urban context is concerned (Comerio, 1998). Hence, the bulk of assistance and funds go towards housing construction (Freeman, 2004). Depending on the scale of a resettlements, and available resources, different approaches are used for housing reconstruction (Karunasena & Rameezdeen, 2010). The most common classification is based on the proportion of

assistance given for housing, namely; owner-driven approach and donor-driven approach (Andrew et al., 2013; Chang et al., 2011; Karunasena & Rameezdeen, 2010).

In the owner-driven approach, the government or the donor agency provides a certain level of financial and technical support while the recipient retains the control over housing construction. In the donor-driven approach, however, the government or the donor agency assumes full responsibility (Karunasena & Rameezdeen, 2010). It is fair to assume that the basic conditions for the adaptation of the new built environment will be satisfied to some extent in the owner-driven approach as the recipients as a whole retain control over constructing their own built environment. On the other hand, it is not very much the case in the donor-driven approach. This view is confirmed by the study of Jigyasu and Upadhyay (2016) who demonstrated that all the examined donor-provided houses after the 1993 earthquake in Marathwada, India, have undergone renovations, repairs, or extensions. This shows that the community could not adapt the houses as it is provided and the houses did not support long-term adaptability. In addition to this case, there are many other case studies conducted in the donor-driven houses also prove the long-term struggle of adapting the new built environment (Barenstein, 2015; Dikmen & Elias-Ozkan, 2016; Muggah, 2008; Takesada et al., 2009). However, reliance on donations and consequent donor-driven resettlements have become necessary for many economically less stable developing countries to make best use of scarce resources (Andrew et al., 2013).

Though, houses are the main segment of the built environment, factors such as location, infrastructure, local culture, and settlement patterns play equally important roles to provide basic positive conditions for the adaptation (Jigyasu & Upadhyay, 2016). However, these reconstruction outcomes are rarely analysed and no studies provide feasible solutions (Barenstein, 2015). Therefore, this research attempts to provide a mechanism to enable better recovery of donor-driven resettlement by improving its process, with reference to both displaced and host communities. In order to provide solutions, it is essential to identify the long-term struggles involved in the resettled and host communities adapting to the new built environment.

2.2.2 Factors Affecting Long-term Adaptability of Communities to a Built Environment

The concept of adaptability is largely discussed as an ingredient of resilience in several studies (Folke et al., 2010; Pike, Dawley, & Tomaney, 2010; Walker, Holling, Carpenter, & Kinzig, 2004). Pike et al. (2010) define adaptability as "the dynamic capacity of a system to effect an unfold multiple trajectories" (p.62). Whereas, Walker et al. (2004) define adaptability as "the capacity of actors in a system to influence resilience" (p.3). Adaptability in terms of built environment, and the relationship between built environment and patterns

of human activity is defined differently by two different schools of thought, one being the built environment adapts to the patterns of human activities (Jigyasu & Upadhyay, 2016); and the second being that human activities adapt to the built environment (Barenstein, 2015). However, conventional anthropological studies articulate that the both built environment and the human activities adjust to each other (Lawrence & Low, 1990). However, irrespective of whether only one or several of these statements are true, this adaptation cannot be expected in the short term without ensuring certain basic conditions, as it is an outcome of a long-term social process.

The measure of a "long-term" can vary depending on the field of study. For example, in business measures, a period of time that exceeds 12 months is considered as long-term. However, concerning resettlements, a substantial period has to be allowed for the resettled population to adjust to the new built-environment as it takes some time for the impact of 'newness' to wear off. Thus, recent studies in resettlements (Fujikura & Nakayama, 2013; Manatunge & Abeysinghe, 2017) considered more than 10 years as long-term. Accordingly, this study also defines a period more than 10 years as 'long-term'.

Resettlements, particularly ones with a donor-driven approach, are often criticised for their inability to create such adaptability for both the built environment and for the people. Ganapati (2016) explains this as a resettlement failure under of two kinds: firstly, project related failures, such as poor planning, implementation, coordination, and participation; and secondly, outcome related failures, such as culturally inappropriate houses, inappropriate materials and technology, and failure to meet needs and expectations of the community. Further, Ahmed (2011) points to lack of institutional coordination lack of planning and clear policy, inequitable distribution, corruption, inordinate construction delays, and financial mismanagement and misappropriation as reasons for the shortcomings of donor-driven resettlements. Based on previous case studies (Andrew et al., 2013; Barenstein & Leemann, 2012; Foresight, 2011; Gunawardena & Wickramasinghe, 2009), long-term struggles in adapting to a new built environment have been grouped under three broad categories, namely housing, infrastructure, and location.

Under each of these categories, most common adaptability issues were identified. Several recent case studies on resettlement satisfaction related to built environment have been identified using 'keyword' search. The problems identified from the case studies were organised with the number of references. The frequently mentioned issues were identified as the most common issues and discussed in the following sections.

2.2.2.1 Housing

Disasters strengthen pre-established practices of social discrimination by weakening the most vulnerable population (Cannon, 2008). Statistics endorse this, as 97.7% of the total disaster-induced homelessness is reported in developing countries (Gilbert, 2001). Thus, housing reconstruction becomes a key component of any post-disaster recovery or resettlement initiative in developing countries. Further, houses are considered as a highly valuable asset by the people thereby making houses a highly prioritised and most urgent need after a disaster (Ahmed, 2011). Despite housing being identified as an urgent need, housing construction typically takes a long (Gilbert, 2001). Hence, governments and donor agencies seek expedite construction by taking quick decisions. Jigyasu and Upadhyay (2016) point out that such quick decisions are a factor in the struggle of the displaced population to adjust the new built environment. The following housing-related struggles are identified based on available case studies by researchers.

2.2.2.1.1 Inadaptability of the houses to local climate

Many studies emphasised inadaptability of houses to local climate as one of the obstacles faced by the resettled population. A case study by Barenstein (2015) in post-earthquake Gujarat, India revealed that the affected people are given flat-roofed concrete houses which are hot in summer and cold in winter, and that the problem was aggravated by the absence of trees, unlike in traditional situations where the resettled community's lifestyle is homestead-based and outdoor-oriented. Barenstein (2015) observed that, as a consequence, an open extension was added to 76% of the houses to enable outdoor thermal comfort. Another study by Sanderson et al. (2012) in the same region further confirms the problem. They observed that most houses were painted in white in an attempt to reflect sunlight and reduce heat gain. The people were, however, unable to add new windows or doors to the houses as the walls comprised heavy concrete blocks, which made alterations difficult. Further, damp patches indicating rainwater leakage were observed on most of the flat roofs and walls, unlike the traditional pitched roofed houses that are built in heavy rain zones to ease the runoff of water.

A study by Jordan et al. (2015) in post-tsunami Nagapattinam, India also reported similar issues. Jordan et al. (2015) observed that a separate cooking space had to be added to most of the houses to prevent smoke damage to the house. Also, respondents noted that the houses are inadequately ventilated for a hot day. Similarly, a study by Seneviratne et al. (2016) in post-conflict Sri Lanka reported a similar experience with the construction materials such as timber did not suit the weather conditions of the location. They made

particular reference to the poor quality of door and window sashes which offered very little or no protection from the rain.

However, the reason for this problem is not just the ignorance of the donor agencies. Typically, the large-scale reconstruction programmes are not very common in developing countries. Therefore, capacity constraints of the construction industry act as a barrier to executing the housing construction as planned (Karunasena & Rameezdeen, 2010). Amid capacity constraints, speedier construction is expected from the industry as the houses are identified as an urgent need. Therefore, house designs are usually chosen to facilitate rapid, and large-scale construction. As a result, some essential features of the local houses that are routinely included to adapt to the local climate are ignored.

2.2.2.1.2 Incompatible house design

Donor-driven houses are often criticised by the beneficiaries for their inappropriate designs, materials and technologies (Ahmed, 2011; Sanderson et al., 2012). A study by Karunasena and Rameezdeen (2010) in post-tsunami Matara, Sri Lanka noted that the design of the houses did not suit the rural lifestyle of the people. Particularly, the kitchens are designed for cooking with a gas-cooker, whereas the people have been used to firewood. Further, the community was unaccustomed to attached toilets, and storerooms were not provided to store their fishing equipment. The study by Gunawardena and Wickramasinghe (2009) in six different tsunami housing schemes in Sri Lanka notes that 43% of the households expressed dissatisfaction with the kitchen size and design which did not provided for cooking with biomass or firewood; and the small size of the kitchen meant that ventilation was poor with the prospect of indoor pollution by fumes. These are some of several instances where the socio-economic conditions of the community were not taken into consideration during design.

A similar issue was identified by Jordan et al. (2015) in Nagapattinam, India where attached toilets were found to have been unused as people were unaccustomed to it and had fears of bad odour. As in the case of post-earthquake Gujarat, the houses did not have provision to keep the cattle, which form part of their livelihood. Such cultural, social, and functional inappropriateness is thus evident in matters of size, style, building materials, and infrastructure services (Ahmed, 2011). Karunasena and Rameezdeen (2010) state that such issues did not arise in owner-driven houses. This indicates that the local needs have been poorly understood by the donor agencies and community participation was inadequate to communicate their needs. Further, Ahmed (2011) observes that many reconstruction projects in developing countries follow a strict 'barrack-type' layout. And

people tolerate the discomforts, as they have no other safe place to go (Sanderson et al., 2012).

2.2.2.1.3 Poor quality of houses

Houses are long-term assets. The quality of a house is generally related to the durability of its physical elements. However, studies in the donor-driven housing schemes point to multiple defects in more than half of the samples. The most common quality-related problems identified concerned ceiling leaks, erosion of cement, erosion of stores, use of poor quality materials, poorly constructed roofs, cracked walls, weak foundation, and other structural defects (Gunawardena & Wickramasinghe, 2009; Jordan et al., 2015; Seneviratne et al., 2016). Also, some houses had been abandoned by the recipients owing to defects (Jordan et al., 2015). The reasons for the shortcomings have been explained in different perspectives in different studies.

Gunawardena and Wickramasinghe (2009) explain defects as an outcome of corruption, where the contractors under spend on materials and construction in order to increase their profit. This is aggravated by the community not being allowed to participate in the construction process. Thus the houses fail to meet the standards stipulated in the contract from the very outset. Ahmed (2011), however, relates the lack of quality of the house to cultural inappropriateness. Ahmed (2011) points out that the quality of the houses was lowered as a result of people seeking to alter or dismantle certain structural features in the process of customising the houses to match their lifestyle. In contrast, Jordan et al. (2015) located the problem in the perspective of the user. Jordan et al. (2015)'s study points out that nearly 80% of the beneficiaries were unaccustomed to concrete houses, and hence their inability and unawareness to invest in structural maintenance, and lack of commitment to regular maintenance which resulted in the decline in quality of the houses. Despite the diversity of views on the reasons for the problems, the core issue appears to be that the local user requirements and their adaptability to alternative housing have not been adequately considered from the very beginning of the construction.

2.2.2.1.4 Less or unavailability of communal space

As explained in Section 2.2, disaster victims generally represent the poorer segments of any developing country. Typically, these people rely on communal resources and networking for their day-to-day living (Jigyasu & Upadhyay, 2016). For example, people use firewood collected from the surroundings for cooking. Case studies also noted the outdoor-oriented lifestyle of the resettled communities (Barenstein, 2015). However, there is no evidence that a systematic approach was adopted to plant trees or to recreate communal resources (Andrew et al., 2013). Further, a case study by Badri et al. (2006) in

post-earthquake Manjil, Iran shows that the new houses were not designed to accommodate animal husbandry. As a result, a considerable decline was evident in the livestock activity of that community. This shows that there are instances where the outdoor environment of the houses has not been planned to satisfy the requirements of the community.

The studies also indicated that, in addition to the houses, donor agencies have built public buildings such as primary schools, meeting halls, and playgrounds in many cases (Barenstein, 2015; Neuhaus & Scudeletti, 2014). Neuhaus and Scudeletti (2014) note that many such public buildings remained locked and unused in the post-tsunami resettlement schemes of Sri Lanka. Similarly, Jigyasu and Upadhyay (2016) observed that the open green spaces created for various purposes in the resettlement schemes in Marathwada, India were used by the community to dump garbage. Barenstein (2015) observed that in Gujarat, India, as the community built a new temple for socialising despite their being provided with other types of common buildings, which were constructed for the purpose. This evidence is that the community has rejected the common spaces, which were created without considering the community's local culture and livelihood.

2.2.2.1.5 Inability to maintain, expand, and upgrade the structure

Large-scale reconstructions often follow a 'one size fits all' policy instead of offering choices (Thiruppugazh, 2016). Such policy is often adopted to facilitate quicker construction and better management. However, there are many variables that decide the desirable size of the house, which can vary from one household to another. Though some resettlement schemes offered flexibility to expand floor area as necessary, the beneficiaries faced many difficulties including financial and legal issues in expanding and adapting the houses to satisfy their requirements (Seneviratne et al., 2016). Obviously, the described adaptations and expansions in different case studies are aligned with the resources of the households (Sanderson et al., 2012). Correspondingly, Seneviratne et al. (2016) observed incomplete extensions resulting from financial constraints of the beneficiaries, which also made the houses vulnerable to adverse weather conditions as well as a seismic activity. Often, lack of land availability also acts as a barrier for expansions (Ganapati, 2016).

As mentioned in Section 2.2.2.1.3, studies have shown that approximately 80% of the beneficiaries in the cases studied have has a little or no prior experience with the given type of houses and required maintenance practices (Jordan et al., 2015). As a result, houses were found to lack adequate maintenance. Further, no study has reported evidence of the beneficiaries being guided on matters of essential maintenance, thus making the houses prone to rapid deterioration which shortens their expected lifetime. The overall

impact of these issues has been dissatisfaction of the users which adversely affects their long-term adaptability of the users to the houses.

2.2.2.2 Infrastructure

The term 'built environment' is not necessarily confined to enclosed buildings and includes all the manmade structures and defined open spaces that support human activities (Lawrence & Low, 1990). Accordingly, the essential man-made installations, henceforth referred to as infrastructure, that support the functionality of the buildings and the community are also a key aspect of any built environment (Moteff & Parfomak, 2004). The inadequacy of the essential infrastructures reduces the functionality of the built environment and ultimately hinders the adaptability of the users.

Generally, a large portion of resettlement funds is expended for housing construction (Freeman, 2004). Consequently, investment is less than desirable on physical infrastructure which is thus poorly provided, although an essential part that fulfils the housing experience. Issues related to insufficient infrastructure are highlighted in many case studies as a factor affecting the long-term adaptability of the displaced community. Correspondingly, studies show that the available resources in the host environment also overwhelmed owing to its excessive use as it is not adequately supported (International Federation of Red Cross and Red Crescent Societies, 2013). Hence, besides being a problem of the displaced community, it also redraws the performance of host community's built environment as well. The following infrastructure-related struggles have been identified, based on a variety of case studies.

2.2.2.2.1 Inadequate sanitation

Lack of sanitation is an indicator of poor living conditions. This has been identified in many resettlement schemes in developing countries, although, ironically, the purpose of the resettlement is the betterment of the people's lives. Barenstein (2015)'s study in post-earthquake Gujarat, India demonstrated that 56% of the households transformed the toilets of their given houses into bathrooms. The key reason for this alteration is the poor quality of sewage construction that made them unusable. Similarly, in a study in post-conflict Sri Lanka by Seneviratne et al. (2016) noted that some of the people from resettled communities share the neighbourhood sanitary facilities or alternatively use the nearby forest. Seneviratne et al. (2016) explain this as a consequence of the inability of the beneficiaries to maintain and upgrade the toilet facility provided.

Moreover, Jordan et al. (2015) observed that road construction did not include sewers in post-tsunami Nagapattinam, India. As a result, people were confronted with knee-deep water during rainy seasons. Similar instances have been observed in post-tsunami

resettlements in southern Sri Lanka as well (Gunawardena & Wickramasinghe, 2009). These issues demonstrate the poor planning and lack of attention to the long-term use of the houses. Sanitation being an essential human need, inadequacies seriously affect the long-term adaptation to the built environment.

2.2.2.2.2 Limited access to physical infrastructure

Access to adequate physical resources is a common problem faced by the resettled community as they have lost access to their water bodies, forest lands, and grazing lands owing to disasters (Cernea, 1995). Particularly, disasters like tsunami cuts off access to groundwater by making the sources saline. Consequently, delays are widely evident in providing access to essential infrastructure such as water, electricity, and civil structures including roads (Gunawardena & Wickramasinghe, 2009).

Access to drinking water, more than other infrastructure facilities, has been emphasised by resettled communities in many instances. Jordan et al. (2015) state that more than 50% of the resettled community struggle for access to safe drinking water. However, Gunawardena and Wickramasinghe (2009) based on a study of six different tsunami housing schemes in Sri Lanka, point out that the access of the community to electricity and energy sources has been better than in the pre-tsunami period. This demonstrates that some infrastructure facilities have in fact improved while others have worsened. It should be noted that this is among issues that if inadequately managed will affects both the displaced and host communities.

2.2.2.2.3 Reduction in community resources

Moving people to a different location results in social disarticulation as the communities lose access to their natural resources and their capacity to produce community resources (Manatunge et al., 2009). Moreover, placing the host community in a position where it has to share its resources such as roads, common buildings, schools, water bodies, forest lands, grazing lands, food supply, healthcare centres, and means of livelihood such as fishery infrastructure (Gunawardena & Wickramasinghe, 2009) with the new community could lead to further complications. Reduction in availability of these resources following resettlement has been reported in many case studies. As a consequence, the competition for resources could weaken social networks and reduce cooperation between the displaced and host communities (Badri et al., 2006). Further, Cao et al. (2012) based on a study in China by demonstrated that food insecurity, owing to the inadequate food supply, increased the displaced community's proneness to poor nourishment and related diseases. Badri et al. (2006) state that this reduction in community resources may result in a decline in the capacity of both resettled and host communities' disaster resilience and adaptability.

Therefore, the International Federation of Red Cross and Red Crescent Societies (2013) have proposed the provision of alternative resources, access to resources outside the area, and/or enabling public/private partnerships to provide alternate resources as some of the ways to manage this problem.

2.2.2.2.4 Lack of transportation network

The transportation network is identified as an essential part of the physical infrastructure (Kusumastuti, Viverita, Husodo, Suardi, & Danarsari, 2014). This transportation network of a resettlement is determined by the layout pattern of the resettlement scheme as well as distance to the displaced community's previous habitation. Typically, in developing countries, large-scale resettlement villages are larger in area and include more houses than the earlier villages of the resettled community (Jigyasu & Upadhyay, 2016). In order to accommodate large-scale construction, mostly locations are chosen in suburban or rural areas. Therefore, distance to the resettled community's networks, the main town, agricultural lands, marketplaces, and previous location become farther.

Further, the difference in spatial parameters and the crowded nature of resettlements contribute to a difference in the layouts and transportation patterns (Keraminiyage & Piyatadsananon, 2013). For an example, the post-earthquake study by Jigyasu and Upadhyay (2016) in Marathwada, India shows that the formal grid layout of the resettlement prevented the evolution of easiest lanes or shortcuts. Also, unlike formal roads, the informal routes in their earlier habitat gave them a natural sense of belonging. Therefore, adequate and suitable road networks and transportation facilities need to be provided to sustain the resettled community in the given location and to enhance their adaptability to the new built environment.

2.2.2.3 Location

Open and uncovered spaces such as compounds, sites, and landmarks are also part of the built environment (Lawrence & Low, 1990). Accordingly, the location of the resettlement plays a vital role in the adaptation to the built environment. It is true that the nature of resettlement allows no room for the resettled community to evolve with full participation. Because, location selection depends on several factors including land availability, the capability of the land to accommodate large-scale construction, and its susceptibility to future disaster. Therefore, the people are expected to somehow become accustomed to the new location (Grundy-Warr & Rigg, 2016). However, suitability of the land for the livelihood and other activities of the resettled community is often overlooked or paid least attention to. Brun (2009) adds that, the host community may become impoverished if their location and resources are shared without adequate support or compensation. While it is

true that there is difficulty in satisfying all essential requirements in selecting the location for resettlement, there is need to take into consideration matters of livelihood and lifestyle of both host and displaced communities to a considerable extent in order to facilitate their adaptation to the new environment. The following location-related struggles confronting the communities have been identified based on case studies.

2.2.2.3.1 Resettlement in unfamiliar and inhospitable locations

Land restrictions are commonly enforced in several countries immediately after a disaster. Predominantly, this is to prevent post-disaster unsafe and unplanned settlements (Ubaura, Nieda, & Miyakawa, 2016). Correspondingly, locations for resettlement are chosen as a process of recovery by the government. This selection of location is generally based on disaster mitigation perspectives along with the restrictions such as land availability and the buildability of the construction industry (Karunasena & Rameezdeen, 2010). However, historically, many resettlement sites in developing countries are observed unoccupied owing to the refusal of the people to occupy or the people end up living in the old villages (Oliver-Smith, 1991).

Case studies explain this as an outcome of culturally inappropriate and low-quality housing designs (Barenstein, 2015). In contrast, Andrew et al. (2013) argue that it is not just an issue associated with the houses themselves, but the location plays a major role in accepting a new built environment. Similarly, traditional migration theories often relate the attraction to migration with the location (Lee, 1966; Vanderkamp, 1977). Because, location is related to a community's social attachment, employment, and culture. In a study by Cao et al. (2012) in China demonstrates a significant drop in living standard of people who are resettled in an uphill location, but are originally from flat land. Further, a case study in post-tsunami Hambantota, Sri Lanka observed that 30% of the tsunami affected fishermen lost their incomes as they are resettled in inland (Perera et al., 2012). These examples show that the unfamiliar locations influence the socioeconomic standard of a community. Moreover, cultural, regional, and ethnic differences between host and displaced communities also influence the pattern of interaction with the built environment (International Federation of Red Cross and Red Crescent Societies, 2013).

2.2.2.3.2 Vulnerability to environmental changes

Ecology of a location can act as attraction as well as repulsion depending on the people's state of mind (Lee, 1966). Historically, societies are evolved and accustomed to a certain climate and ecological system (Moffatt & Kohler, 2008). A difference in this system, whether it is small or significant, could affect the society in different ways such as reduction in food supply and vulnerability to diseases. Internal resettlement within a particular

landscape does not make a drastic change in the local climate and ecology. However, unexpected small changes such as rainfall pattern and average temperature which are different form the people's previous location may make the new community vulnerable.

Jordan et al. (2015)'s study in post-tsunami Nagapattinam, India shows that some resettlements are constructed in highly flood-prone areas. This made the people vulnerable in rainy days. Similarly, Karunasena and Rameezdeen (2010) observed that in some cases Sri Lankan government provided marshy land for resettlement. This makes the population vulnerable to extreme weather and forces them to alter their interaction with the built environment. Therefore, the environmental conditions should be analysed during the land selection for resettlement.

2.2.2.3.3 Changes in land use pattern

Large-scale resettlement schemes are crowded in nature (Keraminiyage & Piyatadsananon, 2013). Therefore, they are generally provided with all the facilities within their boundaries. Consequently, in time, new settlements become a crowded town. According to a study in post-earthquake Manjil, Iran, displaced people found it impossible to engage animal husbandry as the settlement became a town (Badri et al., 2006). This demonstrates that the land use pattern affects the livelihood of the people. As an endorsement, severe impoverishment was observed in Sri Lanka in a case where rice farmers were given tea plots as compensation (Takesada et al., 2009).

In addition, there have been instances when the government allocated marshy and futile land for resettlement in Sri Lanka owing to unavailability of suitable land (Karunasena & Rameezdeen, 2010). As a result, the resettled community will be unable to meet their previous living standard. Further, it affects the continuity of their lifestyle and ultimately it setbacks the adaptability of the built environment.

2.2.2.3.4 Distance to previous location/livelihood

A traditional migration theory named 'gravitational theory of migration' suggest that a target region attracts migrants with force inversely proportional to the distance of their place of origin (Vanderkamp, 1977). This means, that a resettlement location retains people better if the distance from their previous location is short. In many cases it has been observed that long distances to their location of making a livelihood was a key reason for the resettlement failures. Based on studies conducted in India Jordan et al. (2015) explained that most of the resettled people generally engage in traditional work and cannot readily move into other jobs owing to their low level of education. It should besides be added that acquiring new skills is not easy, especially if one is not young. As a result,

people tend to abandon the resettlement sites which are far from their traditional work place. Based on a similar study Pardeshi and Mahajan (2016) suggest that new resettlement sites should be closer to the community's original site as much as possible to retain their social, cultural, and economic fabric.

2.2.2.3.5 Land ownership/title issues

Occasionally, disasters create pressure on land properties. This was largely observed in many countries, particularly after the tsunami, owing to new coastal buffer zone regulations. As a consequence, Grundy-Warr and Rigg (2016) state that resettlement villages in Thailand were exposed to many legal claims and challenges involving the government and international organisations. Similarly, in Sri Lanka private landowners initiated legal claims against the land acquisition for resettlement (Karunasena & Rameezdeen, 2010). These legal issues delayed ownership transfer to the resettled population. In India, there was an instance in which the government took over the land earlier occupied by the resettled people in exchange for the land offered for resettlement (Barenstein, 2015). Such legal issues adversely affect the sense of belonging to the new location and hamper adaptation to the new built environment.

2.3 DIDR and its impacts on communities

As defined in Section 2.1.4, a community is a system built upon several underlying subsystems, one of which is the built environment. Despite being a subsystem of a community, the built environment tends to function in isolation, like a separate system, for which reason it is focused upon in this study. In conventional economic terms, satisfaction of the built environment is measured based on the customers' willingness to pay. According to Day (2013), in the case of resettlement, it can be measured based on ensuring no loss in community's welfare. Commonly in DIDR studies, satisfaction of built environment and resettlement is largely perceived from the standpoint of the resettled community. However, various refugee studies observe that resettlement imposes a burden on the host community and consequently, reduces their satisfaction with the built environment (Ager & Strang, 2008). This perspective is seldom spoken of in internal resettlement studies. Though, various studies emphasise multiple stakeholder participation for disaster recovery, such stakeholders are mainly business organisations, government, NGOs, volunteer groups, international agencies, and the disaster-stricken community, (Lin, Kelemen, & Kiyomiya, 2016). This disproportion in consideration of the host community as a stakeholder is a theoretical gap in DIDR studies, as well as in the planning and implementation process. However, there are case studies (Bell, 2008; Chambers, 1986;

Kabra & Mahalwal, 2014; Whitaker, 1999) which highlight in different perspectives the struggles of host community.

Reflecting the crowded nature of internal resettlements, a tendency has been observed by many researchers that the large-scale resettlements become towns in time (Badri et al., 2006). Depending on the precondition of the host community, it affects their social dynamics and interaction with the built environment, either positively or negatively. Whitaker (1999) explains this based on a study in western Tanzania as, an arrival of new town within rural settings bringing in foreign aid and infrastructure such as electricity and telecommunication to the host villagers. Contrarily, in economic terms, Chambers (1986) explains that hosts benefited by the presence of resettled communities if they are better-off, whereas the host community, if poor, can become deprived owing to the need to share food, work, and wages with the new settlers. A case study of resettlement in post-earthquake Manjil, Iran endorses the above: the number of families with several members working rose family income declined in the host community following resettlement (Badri et al., 2006). However, if the two communities are compatible, it is possible for both to coexist without adversely affecting the living standards of each other.

As explained in Section 2.2.2, the resettled community faces obstacles in adapting to a built environment. Besides, the host community's built environment gets modified as a result of the presence of the new community. Consequently, the host community too is confronted with adaptability issues. In order to identify the domains which would facilitate collective adaptability for both the communities, the need for social mixing through the built environment has to be recognised early in the resettlement process (Doff & Kleinhans, 2011). It can be reasonably assumed that the process of resettlement in developing countries follows very nearly the same pattern as the outcome of similar resettlement scenarios found in the literature pin to very much the same issues. Therefore, to understand the resettlement process, studying in depth a specific developing country will yield more focussed information to draw valid conclusions. Accordingly, Sri Lanka was selected for study the resettlement process in the work reported here.

The basis of the choice was that, firstly, Sri Lanka has decades of varied experience in displacement and resettlement arising from both armed conflict as well as natural disaster (Das, 2008). Also, several Sri Lankan case studies (Das, 2008; Manatunge et al., 2009; Muggah, 2008; Perera et al., 2012; Takesada et al., 2009) report slow recovery of resettlements, as a result of built-environment and community adaptability issues. Further, the Ministry of Resettlement Reconstruction and Hindu Religious Affairs Sri Lanka (2015) - renamed as 'Ministry of Prison Reforms, Rehabilitation, Resettlement, and Hindu Religious Affairs' since 2016 following the change of government - reports that around 45,000

displaced people are yet to be resettled in Sri Lanka. However, the Internal Displacement Monitoring Centre (IDMC), an international non-governmental humanitarian organisation, claims that as of 2015 around 73,700 displaced people remain to be resettled in Sri Lanka. Despite the large difference in numbers practical difficulties in ascertaining the exact figure, the two sources, point to a large number of displaced people awaiting resettlement in Sri Lanka. Moreover, Sri Lanka features a long term well-documented records of displaced and resettled population (Muggah, 2008).

The above-mentioned factors place Sri Lanka among the most suitable countries to conduct DIDR studies. In consideration of the choice of Sri Lanka as the country of study, the emphasis of the research will be on the Sri Lankan context, although references will be made to other contexts as necessary.

2.4 DIDR in Sri Lanka

Internal displacements and resettlements in Sri Lanka date back to its colonial era. The process continued in the years following the independence in 1948 until 1982, a period which could be called the grand era of development, with large extents land acquired for major irrigation projects such as the Gal Oya and Mahaweli projects (Muggah, 2008). The armed conflicts started in 1983, continued till 2009 and caused many internal displacements and resettlements. Moreover, the Indian Ocean tsunami of December 2004, increasingly frequent landslides, and floods added to the count. Moreover, Sri Lanka is ranks among the top-ten countries reporting a large number of disaster-induced homelessness (Gilbert, 2001). According to EM-DAT: The International Disaster Database (2016), 4,320,065 Sri Lankan people were reported as homeless from 1980 to 2014 owing to natural disasters (For annual data see Table 3). Further, a recent study by Habitat for humanity (2017) shows that over 18,000 houses were damaged owing to floods in Sri Lanka only in 2017. However, the actual amount is very much bigger than this as it does not include conflict-induced homeless and other non-reported natural disaster-induced homeless.

Table 3: Disaster-induced homeless in Sri Lanka from 1980-2014

Year	Disaster type	Number of homeless people
1983	Flood	250,000
1984	Flood	390,000
1989	Flood	200,000
1991	Flood	197,151
1992	Flood	261,140
1993	Flood	40,000

1994	Flood	728,150
1995	Flood	120,000
1996	Flood	10,000
1998	Flood	75,000
1999	Flood	375,000
2001	Flood	160
2004	Tsunami	480,000
2009	Flood	60,000
2011	Flood	1,060,273
2012	Flood	69,000
2013	Strom	3,861
2014	Landslide	330

Source: (EM-DAT: The International Disaster Database, 2016)

Concerning DIDR in Sri Lanka, the government's buffer-zone policy, restriction of access to disaster-prone areas and declaration of high-security zones created the need for resettlements (Barenstein & Leemann, 2012). The challenges faced by Sri Lanka, a developing country, to rebuild the nation were aggravated by major disasters, and especially the 2004 Indian ocean tsunami. Given its economic plight, it welcomed many foreign funds for the resettlement projects to supplement the scarce resources (Karunasena & Rameezdeen, 2010).

Consequently, the government enforced several laws and regulations to regulate the process as many large-scale reconstructions were undertaken concurrently.

The most important Sri Lankan laws and policies that governing DIDR are:

I. No. 09 of 2007, Resettlement Authority Act

II. No. 29 of 1987, Rehabilitation of Persons, Properties and Industries Authority Act

III. No. 13 of 2005, The Sri Lankan Disaster Management Act

IV. No. 16 of 2005, The Tsunami Act (Special)

V. No. 24 of 2002, Welfare Benefits Act

VI. No. 09 of 1950, Land Acquisition Act and its amendments to it

VII. No. 56 of 1988, National Environment Act

VIII. National Involuntary Resettlement Policy (NIRP)

No. 09 of 2007, Resettlement Authority Act came into effect to establish an authority called 'The Resettlement Authority'. This Authority is responsible for formulating national policy, and for planning, implementing, monitoring, and coordinating resettlement of internally displaced persons and refugees. The main objective of the Authority is to ensure safe and dignified relocation and to facilitate the development process for displaced persons. Section 14(a) of this Act emphasises forging better understanding between the internally displaced persons and host communities as one of the functions of the Authority. Section 14(k) enables the authority to receive representations of the displaced on their needs to find solutions. However, a recent cabinet decision made by cabinet paper dated 10.03.2016 to close the Resettlement authority, absorbed the said authority's functions under the Ministry of Prison Reforms, Rehabilitation, Resettlement, and Hindu Religious Affairs (Ministry of Prison Reforms Rehabilitation Resettlement and Hindu Religious Affairs Sri Lanka, 2017). Similarly, the National Involuntary Resettlement Policy (NIRP) of Sri Lanka includes the following principles: "Participatory measures should be designed and implemented to assists affected persons to economically and socially integrate with host communities" and "Vulnerable groups should be identified and given assistance to improve their living standards" (Godamunne, 2012). However, it is true that the scale of implementation of these specifications is still on its surface level owing to practical difficulties.

The Resettlement Authority is responsible for implementing resettlement programmes including housing schemes and assisting with infrastructural facilities, education, and health facilities are the functions. Further, the Land Acquisition Act No. 09 of 1950 gives the power to the resettlement authority to acquire, hold, lease, hire, mortgage, and sell any movable or immovable property for the purpose of resettlement. Therefore, the authority can select suitable lands for the resettlements. Also, the Sri Lankan Disaster Management Act No. 13 of 2005 came into effect to establish the National Council for Disaster Management, the Disaster Management Centre and the relevant Technical Advisory Committees. These entities are responsible for the preparation of disaster management plans, award of compensation, and all the affairs related to disasters. Rehabilitation of Persons, Properties and Industries Authority Act No. 29 of 1987 and Welfare Benefits Act No. 24 of 2002 describe the ways to obtain and provide compensation for the damage caused by disasters.

The Ministry of Prison Reforms, Rehabilitation, Resettlement, and Hindu Religious Affairs is the body responsible for the formulation and implementation of policies, plans and programmes for the resettlement and reconstruction of civilians affected by the civil conflict in the North and East and all subjects that come under the concern of Departments, Statutory Institutions and Public Corporations under this ministry. Further, the Ministry of

Disaster Management is responsible for the implementation of the government policies related to prevention of natural and man-made disasters with the assistance of Departments, Statutory Institutions and Public Corporations under the ministry.

This review has identified acts of legislations and the policies that include and address all possible issues associated with the displacements and resettlements. However, resettlement projects have rarely succeeded in Sri Lanka (Das, 2008; Manatunge et al., 2009; Perera et al., 2012; Takesada et al., 2009). Although legislations and policies identify the responsibilities of the parties and processes for bringing up a better coordination among communities, management by implementation agencies and institutional arrangements bring in practical difficulties in adhering to all requirements. For the reason that disaster recovery projects have exclusive characteristics such as emergent strategies, uncertainty, time urgency, community vulnerability and stakeholder issues (Lin et al., 2016). Further, Saparamadu and Lall (2014) identified that the prominent role of political elites in land and land-related policies, lack of transparency in decision-making process, lack of access to information, lack of systematic policy implementation, attempts at bypassing stipulated laws, and lack of political will in devolving power are some of the prominent issues in Sri Lankan resettlement policy and practice.

The abovementioned policies and legislations are implemented by institutions. This is generally referred as institutional arrangements for post-disaster resettlement. The said institutional arrangements can be classified into two categories according to Mannakkara and Wilkinson (2016)'s study. They are: using existing government organisations and creating new recovery authority. Features of these two mechanisms are described in Table 4.

Table 4: Two types of institutional arrangements

Using existing government organisations	Creating new recovery authority
Success depends on the institution's performance prior to disaster	Typically expresses commitment towards the efficient recovery
Typically follows rigid and time consuming procedures	Supports build back better concept
Not suitable for high-pressure situations which need flexibility and fast results	May consume time and resources to form the institution and to acquire regulative powers

Source: (Mannakkara & Wilkinson, 2016)

Post-disaster resettlement institutional arrangements of Sri Lanka follow both categories in different instances. However, the success and the failure of a resettlement also relies on

the degree of decentralisation of the process executed. Following sections explain different approaches depending on the level of centralisation.

2.5 Different approaches for relocation implementation

Depending on the level of centralisation, the approaches for resettlement is classified into two categories, namely top-down approach and bottom-up approach. These two approaches are the two ends of a continuum, and both have its own pros and cons.

2.5.1 Top-down approach

Top-down approaches would typically explain the execution of resettlement programmes with little or no reference to inputs from ground level stakeholders (Mannakkara & Wilkinson, 2016). Two contrasting perspectives of this approach have been much discussed by scholars. One views the approach as generally efficient, cost-effective, and time-saving in contexts subject to strong pressure from various sources. Thus this approach has been adopted in many developing countries in post-disaster contexts where work has to be done against pressure of time as well as of competing social priorities. Invoking of the United Nations Universal Declaration of Human Rights which promotes housing as a human right further adds to the pressure.

Critics, however, consider the approach to be inefficient, owing to its inability to appreciate the needs of the local community and consequences for its acceptance (Lin et al., 2016). Lyons (2009) explains that the potential of the government gets further constrained by the involvement of an international donor organisations. For an example, immediately after the Indian Ocean tsunami, the 'infusion of Aid' model was widely encouraged to follow in many reconstruction projects as a strategy to pool the resources (Chang et al., 2011). This increased the number of stakeholders in the process and reduced the advantages of the top-down approach. Also in this instance, the role of government is not well defined in executing the process.

Further, occasionally, disasters alter the family structure. Quarantelli (1995) explains that family structure could change from the traditional family units to single parent families, childless parents, or single person units. Further, there can also be changes in the age distribution. However, most of the housing constructions follow the traditional housing patterns for a typical family, and Quarantelli (1995) adds that this pattern cannot be recognised in the absence of adequate participation of the community. The extensive study by Jigyasu and Upadhyay (2016) demonstrates that community buildings such as gymnasiums and libraries within the resettlement schemes are often kept locked owing to changes in the social practices of the community. In contrast, the perspective of the government in designing houses includes a responsibility to ensure greater resilience to

future disasters. This intention makes a difference to the construction technology and materials. However, to achieve a middle ground, an agreed role among stakeholders and the government with an informed policy design needs to be clearly defined (Lyons, 2009).

2.5.2 Bottom-up approach

The bottom-up approach explains the execution of resettlement programmes with the participation of the community and local-level organisations (Mannakkara & Wilkinson, 2016). This approach implies further accesses to local knowledge and indigenous resources to find long-term solutions. Recently, this approach has been very much emphasised and urged in many studies (Samaddar, Okada, Choi, & Tatano, 2016). However, the way of involving communities remains debatable. This underlying concept of community participation is stated under different names with slightly differing definitions, the most common being Community Based Disaster Management (CBDM), Community Based Disaster Preparedness (CBDP), Integrated Community Based Disaster Management (ICBDM), Participatory Disaster Risk Management (PDRM), Collaborative Disaster Risk Management (CDRM), and Local Level Disaster Management (LLDRM) (Samaddar et al., 2016). Further, several tools such as workshops, disaster games, participatory rural appraisal, transect walks, and participatory mapping also identified in several studies (Samaddar et al., 2016).

Some successful case studies show the potential of this approach referring to Japanese practice of Machi-zukuri (community-based planning) which still remains dominant in Japan (Lin et al., 2016). Further, some theoretical studies list benefits such as: creation of a sense of ownership; houses suiting the local culture, customs, or wisdom of the community; enhanced potential for coping with crises, conflict resolution, and consensus building (Ophiyandri, Amaratunga, & Pathirage, 2016; Samaddar et al., 2016). Chang et al. (2011) and Lin et al. (2016) recommend this approach as more suitable for underdeveloped countries to rebuild better.

However, critics argue that the control to the community delays the process and a lack of emphasis on technical aspects such as resilient building design can lead to unrealistic solutions (Mannakkara & Wilkinson, 2016). Further, Ophiyandri et al. (2016) draw attention to the limitations of the facilitators of community-based programmes also further drawbacks of this approach.

2.6 Gap establishment and conceptual framework

The literature review evidenced that the number of internal displacement and consequent resettlements are visibly growing across the world. Meanwhile, studies report continuous criticisms of large-scale resettlements for failing to harmonise with the communities in the

long-term. The literature survey provides some indications for the reasons why the resettlements end up in dissatisfaction. One of which is the potential of the built environment to ensure effective social mixing is not recognised in the literature as well as in the process of resettlement. Secondly, the host community is not adequately recognised as a stakeholder in the process of resettlement. Further, resettlement implementation strategies often chose between a centralised approach or a decentralised approach and a middle ground has not been identified for effective implementation. These issues need to be comprehensively addressed, in order to provide a durable solution to the stated problem.

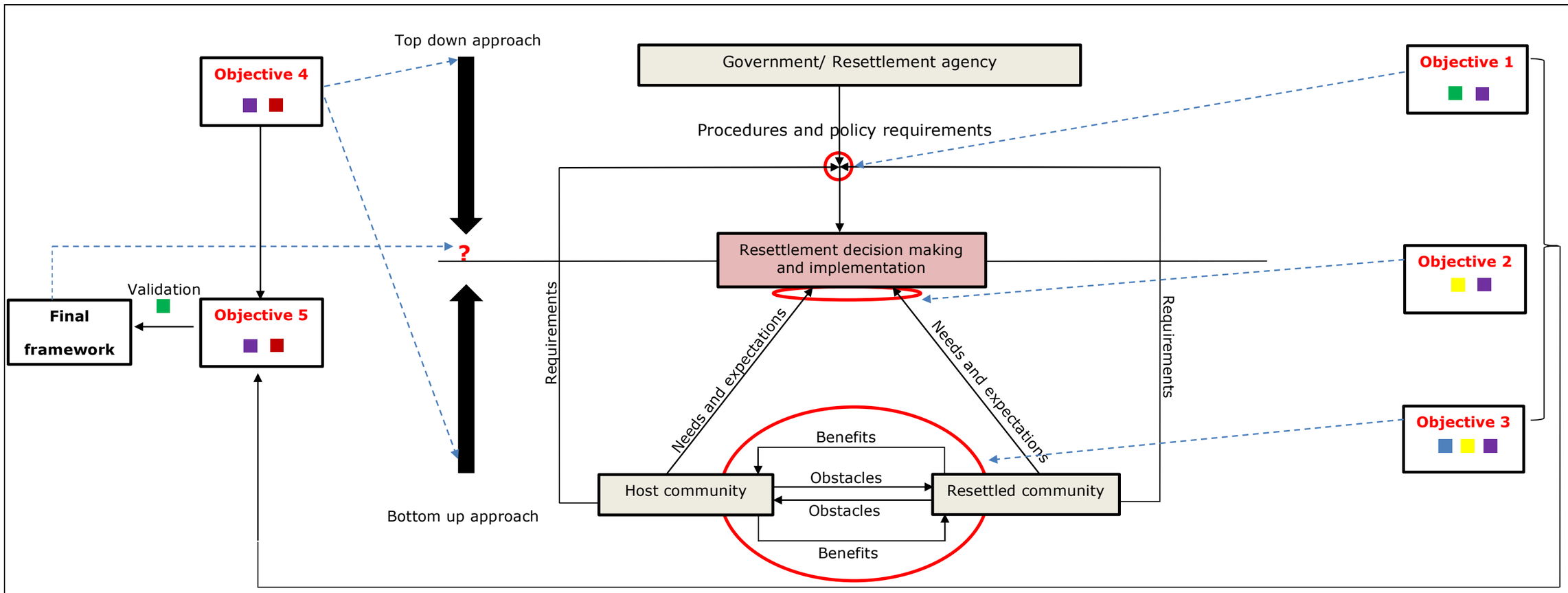
The literature review further shows that the development-induced internal displacements and resettlements have over time attracted much interest in the research spectrum and have thus been studied by many researchers. Disproportionately, both man-made and natural disaster-induced displacements and resettlements have not been studied widely. Thus, this study focuses on DIDR as a contribution to the knowledge pool. Accordingly, as explained in Section 2.4, DIDR in Sri Lanka is chosen as the study focus in order to accelerate an in-depth study. Accordingly, the aim and objectives of the research are formulated within the Sri Lankan context to address the issues concerned. The conceptual framework outlining the empirical aspects of the research gap and process presented in the following section.

2.6.1 The conceptual framework

A conceptual framework is an abstraction of concepts that help to understand the relationships among the concepts and their impact on the phenomenon being investigated (Ngulube, Mathipa, & Gumbo, 2015). One of the functions of a conceptual framework is linking the concepts to research problem and giving directions to empirical research. Hence, a conceptual framework (see Figure 6) is developed with the concepts explored in this Chapter liking with the objectives.

Figure 6 shows how the top-down procedure and bottom-up perspectives relate to resettlement decision making from different dimensions. The areas that need empirical explorations and how they are translated into objectives are also indicated within the framework. Government and resettlement agencies have to follow certain policies and procedures along with the requirement of the communities while planning and implementing resettlements. Studies (Lin et al., 2016; Mannakkara & Wilkinson, 2016) show that top-down procedure has its own gaps and barriers. Thus, the first objective is targeted to identify the gaps and barriers in the post-disaster resettlement procedure in Sri Lanka. Further, the framework shows the relationship between resettled and host

communities where resettlement is concerned. Hence, the second and the third objectives are directed to systematically identify the bottom-up perceptions. Finally, the framework connects how the research gap is related to the final outcome of the study. The fourth and the fifth objectives are designed to establish the gap and develop the final framework.



Research Process		
Context and background		
Literature review		
Research Strategy		
Expert survey	Multiple case studies	Questionnaire survey
Data collection techniques		
- Expert interviews (Local government officials and academic experts - Document review	- Interviews (Resettled and host communities)	- Questionnaires (Resettled and host communities)
Outcomes of the collected data		
Conclusions and recommendations		

Objectives

1. Explore the gaps in current procedures and policy requirements that are followed by the Sri Lankan government/ resettlement agencies during planning and implementation of resettlements
2. Compare and contrast both host and resettled communities' built environment related expectations and needs concerning resettlement
3. Evaluate the existing built environment related challenges and obstacles that are faced by the resettled communities and their host communities
4. Establish the gaps in the top-down procedures and bottom-up perceptions
5. Develop a framework to enable enhancement of post-disaster resettlement process through adaptable built-environment

Legend

Objective focus ------▸ Interlinking connections ——▸ Research gaps that need to be explored

Figure 6: Conceptual model

2.7 Summary and link

This chapter explained the state of art of the phenomenon studied. Firstly, the chapter describes the key concepts of the study. Then, the chapter expands on how the DIDR affects communities and their adaptability to built environment. Inadaptability of the houses to the local climate, incompatible house design, poor quality of houses, unavailability of communal space, and inability to maintain, expand, and upgrade the structure are identified as the most prominent housing related adaptability issues. Inadequate sanitation, limited access to physical infrastructure, reduction in community resources, and lack of transportation network are identified as the most significant infrastructure related adaptability issues. Resettlement in unfamiliar and inhospitable locations, vulnerability to environmental changes, changes in land use pattern, distance to previous location, and land ownership issues are identified as the most frequent problems related to location adaptability. Subsequently, the Sri Lankan context of the subject and different institutional mechanisms is explored. Finally, the chapter explains the gaps in the state of art and conceptual framework directing to the empirical research. The next chapter describes the methods adapted to conduct the empirical study.

Chapter 3 : Research Methodology

Chapter 2 summed up the state of art and the key concepts relevant to this study. This chapter establishes and justifies the selection of methods for the present study. The chapter starts with the methodological framework based on which all the sections are structures. Further, research philosophy, research approach, methodological choice, research strategies, time horizon, case study design, survey design, data collection, data analysis, and validation procedures that were followed are explained.

3.1 Methodological framework

Coherence of research is most important to the reliability of any research findings (King & Brooks, 2016). Thus, the determination of the most appropriate research method is a critical part of the research. Generally, the research method is described in terms of presenting the procedures for conducting research (Billing, 2004). Scholars have proposed different research models that determine such procedures to enable systematic inquiry. The nested model of Kagioglou, Cooper, Aouad, and Sexton (2000) and the Research Onion model of Saunders et al. (2016) are the two most popular research models in built environment research. The nested model of Kagioglou et al. (2000) comprises three layers of inquiry, namely research philosophy, research approach, and research techniques. This model provides a holistic perspective on the logical execution of the research. The research philosophy explains the underlying assumptions of the researcher, research approach describes the form of reasoning, and research techniques are the tools used to collect and analyse the data. Saunders et al. (2016) enlarged the model of Kagioglou et al. (2000) by adding three more layers to arrive at a six-layer model called the "Research Onion" (see Figure 7). The additions are; methodological choice that involves selecting among qualitative and quantitative methods, research strategies that are the formal and explicit procedures of action to achieve the aim and objectives, and time horizon that explains involvement of time in research. The concept of Research Onion is that the researcher has to unfold each layer of this model to understand the next procedure. It further demonstrates how each element and assumptions are interrelated. Hence, the Research Onion offers a more detailed demonstration of the procedure than would the nested model, and was therefore preferred in this study. The procedures adapted for the empirical study based on the 'Research Onion' model are presented in this chapter.

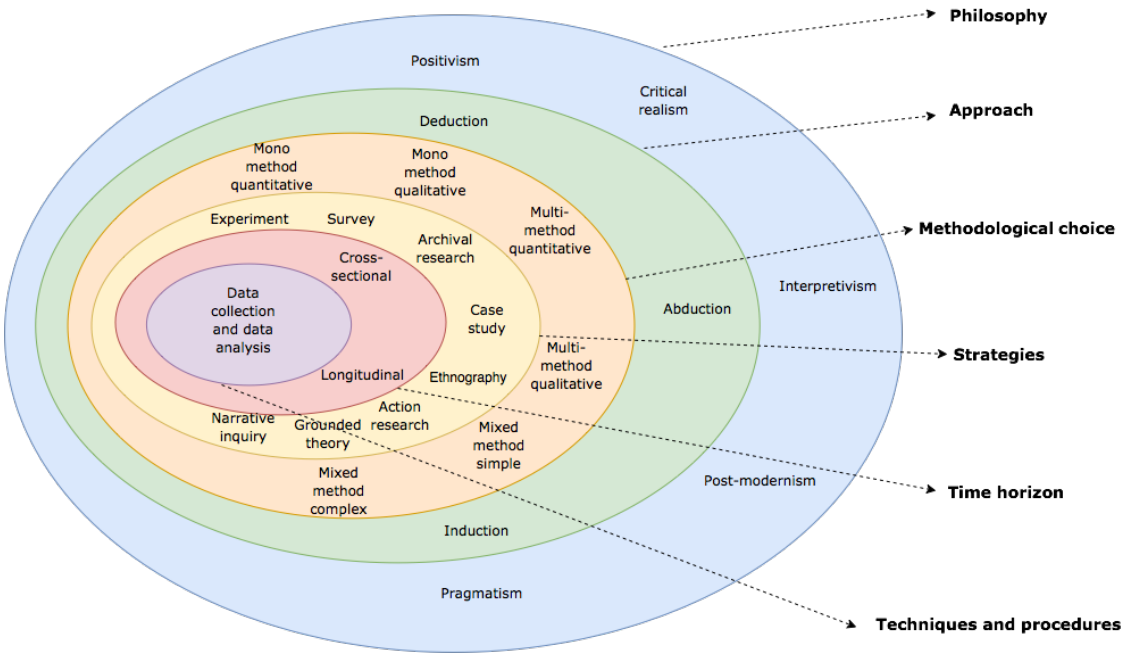


Figure 7: The research onion
Source: (Saunders et al., 2016)

3.2 Research philosophy

Saunders et al. (2016) identify the research philosophy as the outermost layer of the Research Onion (Figure 7). Research philosophy is a system of beliefs built on the way a researcher looks at reality. The philosophical assumptions of a researcher shape the nature of the research questions and guide the development of appropriate research designs through all phases of the study (Lu & Sexton, 2004). The philosophical assumptions include the researcher's ontological, epistemological, and axiological premises. Traditionally, the ontological, epistemological, and axiological presuppositions have been seen as three distinct positions. However, Niglas (2010) considers the philosophical assumptions of a researcher to lie along a multidimensional and integrated set of continua between two contrasting points, widely referred to as objectivism and subjectivism. Accordingly, the different combinations of these points along the integrated set of continua determine the philosophical position of a researcher.

Ontology refers to the researcher's assumptions about the nature of reality. At one extreme (the realist view), it is assumed that reality exists with a predetermined structure that is independent of the will of the people. At the other end (the constructivist view) it is held that individuals, subject to their experiences, can perceive reality in different ways (Saunders, Lewis, & Thornhill, 2012). While ontology seems an abstract concept in its own, its relevance to epistemology makes it offer a more precise understanding that determines the philosophical position (Saunders et al., 2016). Epistemology concerns the way of

acquiring accepted knowledge in the field of study. At the "realist" end of epistemology, the researcher accepts that everything has a general rule and conducts research among observable realities. At the "constructivist" end, the researcher searches for knowledge using the role of humans as social actors to conduct research among people (Saunders et al., 2012). Besides, axiology, a branch of philosophy concerning the study of the nature of value and valuation, brings into play the level of the researcher's own values. Thus, at one extreme of this continuum is the value-neutral, where the researcher seeks to be absolutely independent of the data and its interpretations: and at the other extreme is the value-biased, where the researcher is a part of the data and the arguments (Saunders et al., 2012).

Thus, by placing ontological and epistemological premises in a matrix, four philosophical positions may be identified as shown in Table 5. Besides these four paradigms, there are several other contemporary research paradigms, including pragmatism, contemporary hermeneutics, and feminism, that has been adopted by researchers.

Table 5: Philosophical positions

Philosophical position	Ontology	Epistemology
Neo-positivism	Realist	Realist
Critical realism	Realist	Constructivist
Interpretivism	Relativist	Constructivist
Radical constructionism	Relativist	Strongly-relativist

Adapted based on (King & Brooks, 2016; Saunders et al., 2016)

However, such approach is criticised as polarised by the researchers preferring a dualistic stance (Danermark, Ekstrom, & Jakobsen, 2001). While 'unificationism' retains a long history, an opposing perspective called 'pluralism', which assumes diversity, is also widely recognised by researchers. This debate has dominated the field of research philosophy for long without no consensus thus far (Saunders et al., 2016). As stated in the previous paragraph, ontology does not offer much meaning without relating it to epistemology. Currently, around 13 contemporary philosophical positions support this concept of pluralism (Onwuegbuzie & Frels, 2013). One of which is critical realism that is assumed as appropriate for this research. Thus, this research, following a pluralistic view, draws on both ontological and epistemological premises.

This research is directed at recognising the desirability of the built environment for efficient social mixing within DIDR schemes. While being a system in itself, the built environment is also a subsystem of a community. The interactions of the community shape the built

environment, which in turn shapes and community interactions (Lawrence & Low, 1990). To understand the nature of this two-way interaction, it is essential to know how people perceive reality. According to the well known 'Plato's curve philosophy', we sense reality with our five senses, and believe that they comprise the truth. In recognition of the prospect that there can be unknown realities that are not perceptible, this research follows 'critical reality' as its philosophical position. Critical realism as a concept introduced by the British philosopher Roy Bhaskar (Blaikie, 2009); and Blaikie (2009) argues that reality exists irrespective of whether it is experienced or not. Critical realists believe that by following an experience through sensations, the underlying reality that shapes observable events, can be mentally processed by reasoning backwards (Saunders et al., 2016). Ontologically, this assumes that reality in external and independent, while epistemologically, it accepts that facts are socially constructed. The researcher acknowledges bias arising from experiences and views, and accepts that outcomes are always value-laden.

Depending on the philosophical position, an array of research approaches is available that have the potential to answer the research question.

3.3 Research approach

Research approach refers to the form of reasoning, often described by three approaches based upon the selected form of reasoning, namely deductive, inductive, and abductive approaches (Lipscomb, 2012; Saunders et al., 2016). The second outer layer of the Research Onion identifies an array of research approaches. Deductive reasoning is an approach used to falsify or verify a theory, where conclusions are derived based on logically derived evidence (Saunders et al., 2012). Inductive reasoning, on the other hand, is an approach to theory building based on filling the gaps identified in logical evidence (Saunders et al., 2012). There is also abductive reasoning, a form of logical inference that starts with an observation and seeks the simplest and most likely theory or modification, where reasons are progressively built based on observations (Lipscomb, 2012; Saunders et al., 2012). Besides three, Blaikie (2009) presents a fourth, called the retroductive approach. Retroductive reasoning aims at exploring underlying mechanisms to explain observed regularities (Blaikie, 2009).

Saunders et al. (2016) are of the view that the retroductive approach supports critical realist view as it analyses the pre-existing structures and emerging agency. Danermark et al. (2001) also endorse retroduction as a vital tool to explain the causal mechanism and to find the prerequisites for the existence of the phenomenon studied. Table 6 shows the features of retroductive approach as described by Blaikie (2009).

Table 6: The retroductive approach

Aim	To discover underlying mechanisms to explain observed regularities
Start	Document and model a regularity and motives Describe the context and possible mechanisms
Finish	Establish which mechanism(s) provide(s) the best

Source: (Blaikie, 2009)

As the present study, besides being an attempt to understand the underlying mechanisms and causal relationships within DIDR in different organised levels, also expects to establish a best-suited mechanism for the effective implementation of resettlement schemes, it adopts the retroductive approach as its research approach.

3.4 Methodological choice

The third layer of the Research Onion comprises the methodological choice. Methodological choice involves selecting among qualitative and quantitative methods. Each method includes a set of research strategy and data collection methods. Quantitative methods essentially examine the context numerically and rely on a range of statistical techniques. In contrast, qualitative methods study meanings and relationships within the context and analyse in ways that emerges from the process (Saunders et al., 2012).

Some scholars reject categorisation of methods in quantitative and qualitative terms (Danermark et al., 2001). Particularly, the pluralistic view of reality accepts that research can be a combination of qualitative and quantitative elements. It is also true that the selection of method is influenced by the philosophical stance of the researcher (Bryman, 2004). Some researchers believe that a combination of the qualitative and quantitative method is permissible only if the researcher assumes multiple paradigmatic positions. Whereas, there are others who claim that a single paradigm is adequate foundation for this combination (Tashakkori & Teddlie, 2003). However, Danermark et al. (2001), from a stand known as 'critical methodological pluralism', argue that this mix can be achieved without the ontological and epistemological presumptions. Their concept supports the pluralistic perspective and the critical realist stance.

Since this research follows critical realism as its philosophical stance, it relies on a mix of methods to provide a better understanding of the contextual background. Besides, the mixed method offers the researcher a broader perspective than reliance on one method alone (Creswell et al., 2003). Accordingly, this research adopts a 'concurrent mixed method research' which involves separate quantitative and qualitative data collection and analysis within a single phase of the study (Saunders et al., 2016). Creswell et al. (2003) classify

the concurrent mixed method research into three subdivisions, namely concurrent triangulation, concurrent nested, and concurrent transformative, based on the stage of integration. This research uses the 'concurrent nested mix method' and Figure 8 shows the design of the said method.

The concurrent nested mix method involves simultaneous conduct of both quantitative and qualitative data collection, although it tends to gives higher priority to one method (Creswell et al., 2003). In the present study, qualitative data collection and analysis address the predominant spectrum of the research questions, while quantitative data collection and analysis address a different question addressed by the dominant method. The data collected by both methods are mixed in the analysis phase of the research. The concurrent nested mix design is selected in view of the advantages that exclusively suit this study. This design gives insights of certain aspects in quantitative terms within a qualitative study, which cannot be clearly identified by a qualitative method (Creswell et al., 2003). Further, as critical realism perceives reality at different levels, this design opens an opportunity to look at different levels of different methods. Moreover, this design, which will comfortably fit into any research framework, offers the advantages of both qualitative and quantitative methods. In addition to these advantages, this design permits collection of data during one phase, allowing more time for analysis and interpretation.

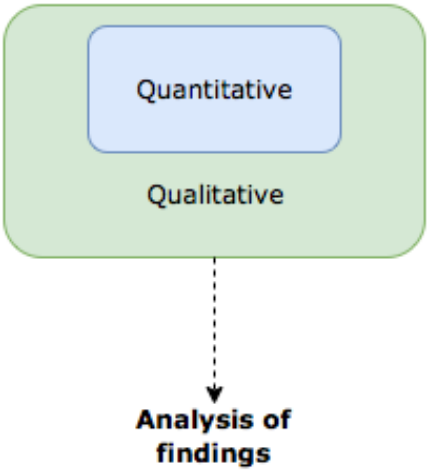


Figure 8: Concurrent nested design
Source: (Creswell et al., 2003)

3.5 Research strategies

Research strategy that constitutes the fourth layer of the Research Onion represents the formal and explicit procedures of action to achieve the aim and objectives of the research (Yin, 2014). Various authors (Creswell, 2003; Lu & Sexton, 2004; Saunders et al., 2012; Yin, 2014) propose varied approaches linking with the philosophical stance of the

researcher. Saunders et al. (2016) list eight common research strategies: experiment, survey, archival research, case study, ethnography, action research, grounded theory, and narrative inquiry. From this list, Creswell (2003) identified experiments, surveys, ethnographies, grounded theory and case studies as the most frequently used research approaches in social science research.

The experiment is a method to test a hypothesis in a controlled environment. This method is widely used to test the experimental group against a control group to validate or falsify a hypothesis (Saunders et al., 2012). However, the present study aims at in-depth studies on people in an uncontrolled environment. Thus, this method is inapplicable to this study. Ethnography is a study in which the researcher studies a cultural group for a prolonged period (Creswell, 2003). It is typically an evaluation of live reality encounters. As it takes a prolonged period to collect data, it is rendered unfeasible by time limitations. Grounded theory is used to develop theoretical explanations of social contexts and people's behaviour (Saunders et al., 2012). It involves multiple stages of data collection and comparison of data to develop the theory. Generally, the researcher sets out with a blank paper and an abstract theory for data collection. Theory is developed in the process of data collection. Thus, the present study, instead, adopts a pre-developed conceptual model in anticipation of a certain level of data.

Case studies are valid in instances where the research needs to address questions starting with 'how' and 'why', and focus on contemporary events over which the researcher has no control (Yin, 2014). The present study while seeking to address the principal research question starting with a 'why' also concerns people and their behaviour over which the researcher has no control. These features of this research fit in well with the above criterion to make the case study approach the most appropriate to answer the research question. On the other hand, as discussed above, other strategies are less suitable to be adopted owing to the nature of this study. The third objective, however, is to evaluate the built environment adaptability issues faced by the communities, and thus its achievement may require another approach that will be more suitable than case studies. Also, the above objective needs richer and stronger evidence than case studies could provide. Hence, the survey approach was considered appropriate to achieve the objective. As explained in the previous section, the survey was conducted simultaneously with the case study and mixed during the analysis phase of the research.

3.5.1 Case study design

Yin (2014) identifies the case study question, its propositions, unit of analysis, logic linking data to propositions, and criteria for interpretation of the findings as the five key

components of case study design. The principal research question emerged from the literature review as "Why do post-disaster resettlements often end up in dissatisfaction?" Besides, during the course of the empirical study, arose two issues: "How best can a potentially effective recovery within the Sri Lankan post-disaster resettlement programmes be achieved through providing an adaptable built-environment?" and "What are the built environment adaptability issues faced by the communities?" These issues are also intended to be addressed based on the empirical study. The following study propositions are assumed in order to answer these questions, based on the literature review.

- The built environment has potential to enable effective social mixing among communities.
- Human beings are capable of adapting to a built environment if certain necessary conditions exist.
- The host community too is an essential stakeholder in the resettlement process.
- A middle ground between centralised and decentralised approaches has to be arrived at for effective implementation of resettlements.

The third component of the case study design, namely the unit of analysis and/or case, is defined based on the assumed study propositions. While several scholars identify the unit of analysis and the case separately, there are arguments that insist that the unit of analysis and the case denote the same (Grünbaum, 2007). The latter view prevails in classical case studies that largely study each individual as a case (Yin, 2014). However, in contemporary case studies the researcher is often required to specify the unit of analysis in addressing cases involving different spectra such as communities, relationships, projects, and decisions. Likewise, this research considers resettlement schemes as cases that require defining the case and the unit of analysis separately. In this context, Yin (2014) proposes four designs depending on the number of cases and units of analysis, namely single holistic, single embedded, multiple holistic, and multiple embedded case study designs.

The multiple embedded case study design (see Figure 9) was chosen for the purpose of this research for the key reason that there was need to confirm an assumption identified in the literature review. Both conflict-induced and environment-induced displacements and/or resettlements are referred to by the umbrella term 'Disaster-Induced Displacement and Resettlement' (DIDR), assuming implicitly that dissatisfaction with resettlements would follow the same pattern. Multiple case studies representing both criteria were selected in order to validate this assumption. Further, unlike single case study designs, multiple case study designs offer advantages such as robust data and replication logic. Accordingly, the cases of this study comprised groups of people representing communities

that lived or were expected to live in disaster-induced permanent resettlements in Sri Lanka.

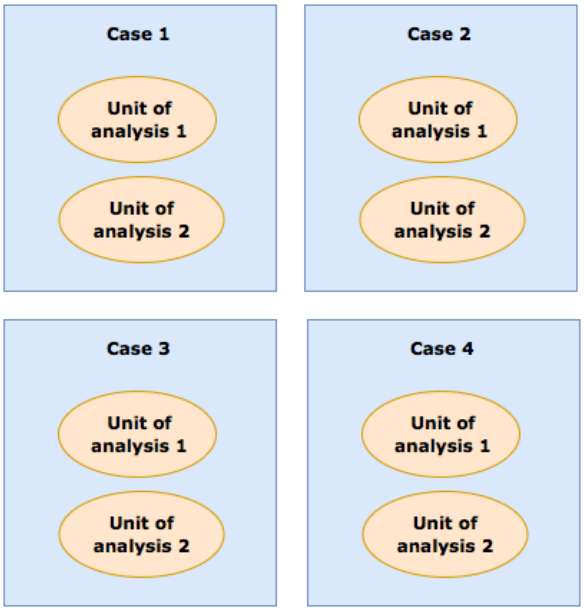


Figure 9: Multiple-embedded case study design
Source: (Yin, 2014)

Prior to case selection, it is essential to define case study boundaries. Sri Lanka was selected as a highly suitable country to conduct the empirical study as justified in Section 2.4. The three districts selected for study areas, namely Jaffna, much affected by conflict, Batticaloa, severely affected by the tsunami, and Badulla, highly prone to landslides, ensured that all categories of DIDR were covered while the number of cases and data remained manageable (see Figure 10). The districts belong to three different provinces, namely the Eastern, Uva and Northern Provinces.

Batticaloa is the administrative capital of the Eastern Province. The Batticaloa District, located on the east coast of Sri Lanka encloses the Batticaloa lagoon and adjoins the Indian Ocean. This district is prone to seasonal natural hazards including floods, ocean tide, and cyclones. Although the Indian Ocean tsunami that struck the coast of Batticaloa in 2004 affected over 75% of the Sri Lankan coastline, the Batticaloa District was among the most severely damaged, with much of its coastal region wrecked by the tsunami waves. The tsunami destroyed 5,665 houses and partially damaged 15,939 houses in the district (Inoue et al., 2007). The district underwent large-scale resettlements following the tsunami with assistance from many local and foreign charity organisations. According to the Ministry of Prison Reforms Rehabilitation Resettlement and Hindu Religious Affairs Sri Lanka (2017), 36,550 families had been resettled in the Batticaloa district, as of 30.09.2015 (the last

update before data collection). Accordingly, this district was selected as the study area to represent tsunami-induced resettlements.

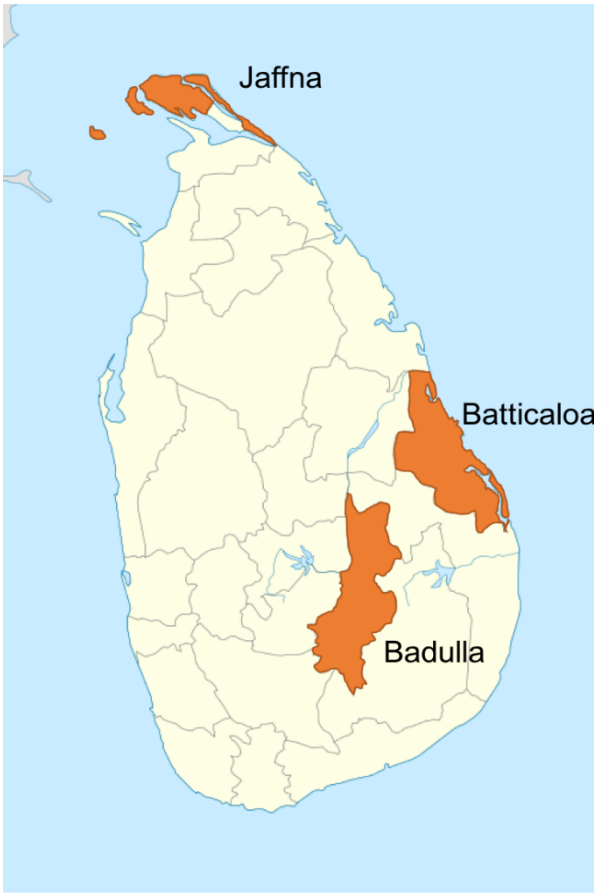


Figure 10: Case study area

Badulla is the administrative capital of the Uva Province. The Badulla District comprises a hilly terrain as well as low-lying lands and is thus divided an upper region and a lower region, based on geographical features. The upper region is highly vulnerable to landslides. According to NBRO, the Badulla District has largest number of buildings which are susceptible to damage by landslide (Jayathilake, 2017). Table 7 shows the district wise distribution of buildings with high risk of damage due to landslide.

Table 7: Districts wise high risk buildings

District	Number of high risk buildings
Badulla	6,418
Nuwara Eliya	3,496
Kandy	1,292
Kalutara	929

Source: (Jayathilake, 2017)

Having identified high-risk regions vulnerable to landslide, NBRO is in the process of relocating people living in vulnerable buildings. Accordingly, this district was selected as the study area to represent landslide-induced resettlements.

Jaffna is the administrative capital of North Province of Sri Lanka, and the Jaffna District was severely damaged during the civil war commencing in the 1980s and remained isolated for decades. The district, being the stronghold of the insurgents who battled the armed forces of the Government, was prominent in the Sri Lankan civil war. In July 2009, following the formal end to the conflict, 2% of the Sri Lankan population was displaced of whom 23% were from Jaffna District, and the displaced included the entire Muslim population of the North (Husain et al., 2011). Of the displaced population from Jaffna, 98% were displaced by civil war and 2% by tsunami (Department of census and statistics, 2007). It is estimated that 160,000 houses were destroyed or damaged in northern districts (UN-HABITAT, 2015). Currently, the district undergoes a considerable post-war reconstruction and development activities and, according to the Ministry of Prison Reforms Rehabilitation Resettlement and Hindu Religious Affairs Sri Lanka (2017), 31,366 families were resettled in the Jaffna district, as of 30.09.2015 (the last update before data collection) as part of these activities. Accordingly, this District was selected as one of the study areas to represent conflict-induced resettlement. The returnees chosen for study belonged to the Muslim community, who had been displaced from the District in 1990, comprising the largest and longest war-displaced group.

The preceding paragraphs illustrate that the case study areas chosen represent regions that typically represent the three main types of DIDR in the country. As evident from these paragraphs, the Badulla District would also include cases of communities that live or expected to live in disaster-induced permanent resettlement schemes in Sri Lanka. Based on that that, a criterion as illustrated in Figure 11 was established for case selection among landslide related resettlements.

Yin (2014) expresses the view that that there can be no formula to define the number of cases. Time limitations, access to cases, and data saturation factors that can limit the number of cases considered. Thus, there was no way to define number of cases at the outset of data collection. Local authorities from each district were approached and groups of people from resettlements were selected as cases based on the recommendation of the officials. The number of cases studied was further expanded, using a snowball sampling technique, through recruiting further contacts from among acquaintances of early respondents. The list of selected cases is given in Table 8.

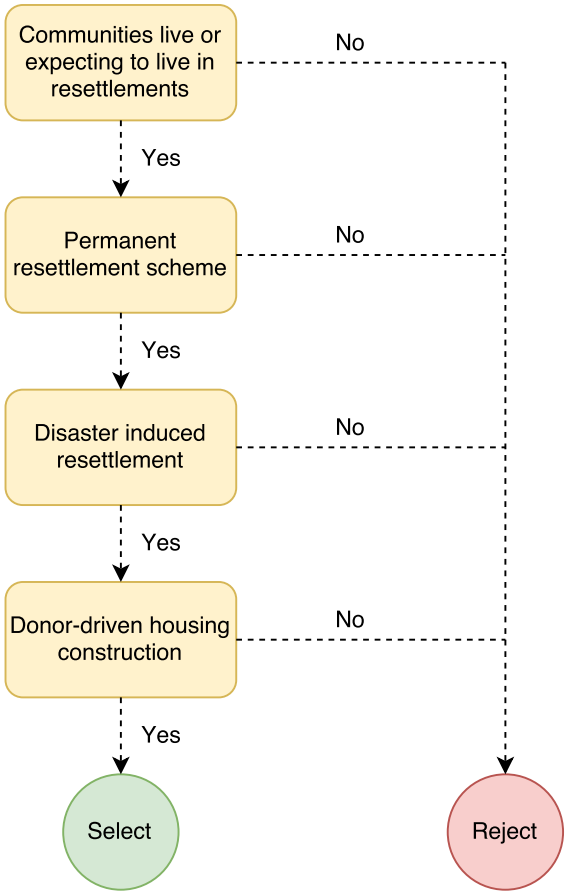


Figure 11: Case selection criteria

Table 8: Selected cases

District	**Post-disaster resettlement**
Batticaloa	1. Kallady
	2. Thiraimadu
	3. Kaluwanchikudy
Badulla	4. Arnhall
	5. Queenstown
	6. Makaldeniya
	7. Meeriyabedda
	8. Newburgh, Ella
Jaffna	9. New Moor Street

With the cases defined, it is necessary to identify the units of analysis to address the case study questions. As the study seeks to answer multiple research questions, analysis is also likely be in multiple units. The units of analysis for this study comprise favourable and unfavourable conditions, resettlement procedures, and expectations and needs. The logic linking the data to the propositions is as illustrated in the conceptual framework in Figure 6. The research techniques used to interpret case study data are explained in the sections that follow.

3.5.2 Survey design

Yin (2014) proposes two possible ways of mixing survey with case study, namely a case study within a survey, and a survey within a case study. The survey within a case study is considered the most appropriate to the present research as it has adopted the concurrent nested mixed method design to describe certain features of a qualitative study in quantitative terms. Thus, two parallel 5-point Likert-scale questionnaire surveys were conducted among resettled and host communities in Batticaloa and Jaffna in Sri Lanka between June 2016 and August 2016. The Badulla district was not considered for the survey as the cases comprised communities awaiting resettlement or near completion of the houses. The questionnaire survey was designed to verify and validate the relevance of the 14 identified built-environment adaptability issues. (See Section 2.2.2.) Accordingly, adaptability issues relevant to both displaced and host communities were presented for scaling on a 5-point Likert scale ranging from "Not at all an issue" to "Serious issue". (See Appendix 1 and 2 for questionnaires.) The expected sample size for the study was 200, comprising around 100 from each community, and hence, 240 questionnaires were distributed to allow for a possible 20% of unreturned and incomplete responses. (See Section 5.3.2 for sample size justification.) The number of returned and usable questionnaires was 188, comprising 111 from resettled communities and 77 from host communities.

3.6 Time horizon

Time horizon is the fifth layer of the Research Onion. The time horizon of a research is categorised into two: cross-sectional, and longitudinal. Cross-sectional research is a snapshot of a particular period, while longitudinal research consists of a series of snapshots over a period of time (Saunders et al., 2012). This study could have been conducted in either way. However, this research favours a cross-sectional study since the objectives of this study is formed to analyse the top-down and bottom-up perceptions of the resettlement procedure. Studying both perspectives in a longitudinal timeline requires two simultaneous studies. Further, time constraints of academic research also compelled the study to adopt a cross-sectional time horizon.

3.7 Research techniques and procedures

The innermost layer or the core of the Research Onion comprises research techniques and procedures. Yin (2014) describes six sources of data collection for the case study strategy. They are document review, archival records, interviews, direct observations, participant observations, and physical artefacts. Generally, case study research requires multiple sources of evidence to construct validity. Thus, two of the said research strategies, namely document reviews and interviews, being the most appropriate and feasible, were chosen for use in the study. Document review was selected as an efficient data collection technique for this study since it is less time-consuming, readily available, cost effective, stable and non-reactive (Bowen, 2009). Further, interview was selected as another data collection technique since this study is an attempt to explore the social phenomenon that is little known and it needs deeper exploration. Besides, since the study assumes a mixed method design a questionnaire survey was also incorporated as a research technique.

3.7.1 Data collection

The first objective of the study was to explore current procedure and policies followed in resettlement planning and implementation. The information was obtained from officials who were experienced and knowledgeable in the field. Expert interviews are increasingly popular in the qualitative research context, particularly in instances where practical research faces access restrictions and time constraints (Littig & Pöchhacker, 2014). Generally, the resettlement process is prolonged, and identifying current procedures through primary data demands time. In view of the time limitation, the expert interview was considered the best-suited and most efficient method to explore current policies and procedures adopted in the process of resettlement. Bogner and Menz (2009) define an expert as a person who has an institutionalised authority to hold control within the context of the field of study. They also state that the decision on who may be identified as an expert and who not ultimately depends on the researcher. The criteria for identification of an expert for this study were based on the specialised knowledge acquired by the individual on the process of resettlement in through professional activity. Littig and Pöchhacker (2014) classify the expert interviews into three based on the purpose of the research. They are: Exploratory interviews that are used to obtain an overview of a poorly understood field, Systemising interviews that are used to systematically reconstruct the experts' experiential and professional knowledge, and Theory-generating interviews that are sued to elicit specialised knowledge. This study follows systemising expert interviews and selection was based on association with an institution relevant to the resettlement during its different stages. Accordingly, three practitioners and three academics, all experienced in the fields of resettlement and disaster management in Sri Lanka, were selected, ensuring

balanced representation. Relevant particulars of the experts are presented in Table 11. The interviews followed a semi-structured format based on a predetermined format. The interview guideline and a sample interview transcript are provided in Appendixes 3 and 4. A document review was also conducted as a means of triangulation of expert interview data. Five carefully selected documents based on their authenticity, credibility, and representativeness were used to obtain information similar to what was intended to be gathered from expert interviews. A selection of relevant documents is presented in Table 10. The number of expert interviews and selection of documents were determined by data saturation within the scope of the study.

The second objective is to compare and contrast built-environment related expectations and the needs of the communities. In order to achieve this objective, the communities needed to be consulted systematically. Hence, semi-structured interviews were considered a suitable method. Barriball and While (1994) consider semi-structured interviews to be well suited to elicit insights of complex and sensitive issues. Further, they enable probing for more answers or clarification as necessary. Based on that premise, semi-structured interviews were conducted among selected communities in the case study area. The number of respondents was determined by data saturation and unanimity of the respondents. The number of interviews conducted is listed case wise in Table 29.

The third objective is to evaluate existing built-environment related challenges and obstacles for the communities. A questionnaire survey was conducted to achieve the objective. The questionnaire design is described in Section 3.5.2. The case study interviews also included questions related to this objective. The fourth and fifth objectives, namely determining the gap and developing the framework, are achieved based on the outcome of the analysis.

All the ethical procedures are followed during the data collection as agreed with the University of Huddersfield ethics committee (see Appendix 5 for approved ethics form).

3.7.2 Data analysis

Data analysis, however, relies much on the researcher's style of empirical thinking and interpretation. Study of Braun and Clarke (2006) shows that thematic analysis is the basis for the incredibly diverse variety of qualitative approaches for analysis. There are multiple ways of conducting thematic analysis across disciplines. Template analysis, a form of thematic analysis, is employed in this study in consideration of the epistemological position of the research. Template analysis emphasises hierarchical coding by balancing a high degree of structure (Brooks, McCluskey, Turley, & King, 2015). Accordingly, preliminary

coding was organised into themes using NVivo software and structured into a template. The template thus developed was used across the cases.

Data analysis of document review combined elements of content analysis and thematic analysis to elicit findings. Further, descriptive statistical methods were used to analyse the demographic data collected from the questionnaires, which were further processed using MS Excel software. The Factor Analysis method was used to analyse the Likert-scale data to understand the structure of a set of variables, measure underlying variables, and reduce data to a manageable size (Field, 2007), which were further analysed using SPSS software.

3.8 Validity and reliability

Validity and reliability are the two factors that need to be considered in the design and analysis for the study to ensure quality of research. The terms validity and reliability are interpreted differently, according to context, in qualitative and quantitative studies. Yin (2014) lists four tests to confirm validity and reliability in case study research, namely construct validity, internal validity, external validity, and reliability.

Construct validity is about applying measures appropriate to the concept under study, as subjective judgements can be involved in the collection of data. Thus, the use of multiple data collection techniques to gather evidence would help to confirm construct validity. Further, a researcher is often inclined to assume that a particular event was consequent upon another earlier event. Thus, such assumption should be confirmed by comparing similar occurrences across cases. Yin (2014) argues, however, that internal validity is unessential to descriptive or exploratory studies. The third test deals with external validity, which is meant to test whether the findings can be generalised beyond the scope of the case study concerned. This is verifiable using replication logic in multiple case studies. Finally, reliability requires demonstrating that the operation of the research is repeatable within and beyond the study, and can be confirmed by following a standard protocol that can be replicated.

Validity and reliability of the case study as required by Yin (2014) are confirmed via following techniques as shown in Table 9.

Table 9: Validity and reliability

Test	**Case study tactic**	**Phase of research**
Construct validity	Collect study evidence via multiple sources.	Data collection

Internal validity	Link case study findings through cross-case analysis and interpret using critical comparison.	Data analysis
External validity	Ruse replication logic in multiple case study	Research design
Reliability	Make case study follow a structured protocol	Data collection

Reliability of the questionnaire survey data is tested using quantitative techniques. Helms, Henze, Sass, and Mifsud (2006) define reliability for Likert data as the extent to which the sample patterns of responses to items are consistent across items. SPSS software offers Cronbach's Alpha Test, based on an 'internal consistency' coefficient, which is the most frequently used reliability coefficient test (Cho & Kim, 2015). Thus, the said test was conducted to confirm reliability of the quantitative data. Section 5.3.1 contains a detailed description of the test.

3.9 Outcome of the research and validation

A framework that enables enhancement of post-disaster resettlements is the intended outcome of this research. The final framework was developed based on the outcomes of the analysis. The framework (see Chapter 8) lists gaps and issues in each phase of the resettlement and suggests indicative actions for each gap. The framework is validated for authenticity and credibility through another series of expert interviews. Another group of experts are engaged in the validation process, and each gap and the corresponding indicative action were validated based on their opinions. Relevant particulars of this second group of experts are presented in Table 40.

3.10 Summary and the link

This chapter contained a description of the methods followed to conduct the empirical study of this research. Firstly, it stated with justification the philosophical stance of the researcher and then described the research approach and methodological choice, along with case study design, survey design, and justification of the case selection. The study adopts a concurrent nested mix method that follows a survey within a case study. The collected qualitative data was analysed using a template analysis technique to identify themes and patterns. The quantitative data was further analysed using the factor analysis technique in order to understand the underlying concepts. This chapter finally presented the data

collection tools, data analysis techniques, and validation strategies. The chapter that follows presents the data analysis of documents and expert interviews.

Chapter 4 : The Top-down Approach: Gaps and issues in the resettlement process

Chapter 3 explained the methods adopted for this study. This chapter explains the procedures adopted to explore current procedures and policy requirements that are followed by the Sri Lankan government/resettlement agencies in implementing post-disaster resettlements. This chapter then presents the analysis and explains key findings of document review and data analysis of expert interviews in exploring the aforementioned.

4.1 Background and procedures used in document analysis

Document analysis is a systematic review of non-technical documents to yield data in combination with other methods as a source of triangulation (Bowen, 2009). The purpose of the present document analysis is to explore the current resettlement procedures as recorded in the official documents. Document analysis requires data selection, instead of data collection. However, Coffey (2014) emphasises that the researcher should be mindful of what the documents contain, how they are structured, and the functions to which they are put. Accordingly, the documents for this analysis have been carefully chosen, based on their authenticity, credibility, and representativeness. Selected documents are presented in Table 10 and the procedure adopted for the document review is illustrated in Figure 12.

Table 10: Selected documents for the analysis

Document no.	**Document title**	**Author/Authority**
D1	An introduction to housing and land laws in Sri Lanka	Centre on Housing Rights and Eviction (COHRE), Sri Lanka
D2	Implementation framework for resettling landslide and flood victims	National Building Research Organisation (NBRO), Sri Lanka
D3	National policy on disaster management	Ministry of Disaster Management, Sri Lanka
D4	Plantation housing programme: Performance report	Ministry of Plantation Infrastructure Development, Sri Lanka
D5	Post-tsunami housing reconstruction, Sri Lanka	Belgian Red Cross

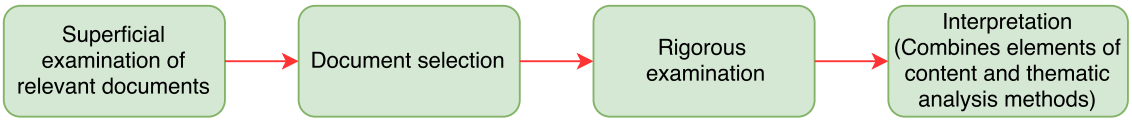


Figure 12: Document review procedure

A superficial examination of available reports, legislation, and databases relevant to Sri Lankan and international post-disaster resettlements, which are available in print and online, is carried out and the most pertinent and credible materials are selected for the study through a screening process. Thenceforth, a thorough examination of the selected documents is made and interpreted to yield relevant answers. The analysis combines elements of content analysis and thematic analysis to elicit findings.

4.2 Background and procedures adopted for expert interviews

The purpose of these expert interviews is to explore the current procedures adopted by the top-down organisations in the resettlement process. Based on the study design, systematising expert interviews (see Section 3.7.1) are conducted in Sri Lanka from June 2016 to August 2016. These interviews were conducted to extract experiential, professional, and technical knowledge from experts in the subject of investigation. Multiple sources of evidence are among validation methods in qualitative studies. Hence, the results of expert interviews are triangulated with document analysis to improve the credibility of the findings. The semi-structured interviewing technique is selected to ensure the comparability of the interviews (Littig & Pöchhacker, 2014). Predefined interview guidelines were piloted with two academics to examine its face and content validity. Thenceforth, the experts were selected. Littig and Pöchhacker (2014) state that the definition of an expert depends on research design, interaction situation, and the interviewing process. Three practitioners and three academics, all with experience in the field of resettlement and disaster management in Sri Lanka were selected to ensure balanced representation. Relevant particulars about the experts are presented in Table 11.

Table 11: Profile of experts

Expert no.	**Description**
E1	Land investigation officer: In-charge of land acquisition and allocation for resettlements
E2	Development officer: Disaster management division: In-charge of resettlements

E3	Medical anthropologist: Who worked with NGOs during 2004 Indian-ocean tsunami resettlements in Sri Lanka
E4	Senior lecturer: With a research expertise in resettlements
E5	Research fellow: With a research expertise in disaster management
E6	Research assistant: With a research expertise in disaster management

The interview transcripts were analysed using a template analysis method. Themes are identified and coded using NVivo software.

4.3 Current procedures and policy requirements in post-disaster resettlement implementation

4.3.1 Setting up resettlements

Occasionally, disasters make lands unsuitable for human habitation by changing their topography, economy, or demographic structure. Following a disaster of this nature or on identification of risk of such disaster, Sri Lankan government agencies such as the Department of Irrigation, National Building Research Organisation, and Sri Lanka Land and Reclamation and Development Corporation declare reservations or restrictions on the lands concerned. D2 classifies the reservations, based on their rigorousness, under three categories, namely prohibited zones, restricted zones, and warning zones. Soon after the declaration, resettlements are often initiated by the Sri Lankan government, or government agencies, to safeguard the people who live in these zones. This displays, as Betts (2009) pointed out, that the involuntariness in the resettlement was not induced by the disaster but a result of governmental rulings which revoke the people's preference to remain.

Article 25(1) of the Universal Declaration of Human Rights lists adequate housing as a right. However, according to D1, socio-economic rights are not recognised in the Constitution of Sri Lanka; and D1 further states: *"There is no express provision in the Constitution to safeguard citizens' housing rights in its fundamental rights chapter".* The intention of the government to ensure adequate housing for displaced persons, although not a constitutional responsibility, is clear from D2, D3, D4, and D5, in the context of its involuntary nature. Thus, soon after a land restriction declaration, the government is under pressure to provide alternative land and housing to the affected people.

4.3.2 The problem in context

Despite Sri Lanka's long history of development-induced displacement and resettlement (see Section 2.4), the Indian Ocean tsunami of 26th December 2004 initiated the jump

starting of large-scale disaster-induced displacements and resettlements (DIDR) in Sri Lanka. According to D1, E2, and E4, Sri Lanka lacked a well-formulated housing policy for DIDR before the tsunami. As a result, tsunami resettlements were dealt with ad hoc, based on policies guided by situational requirements. Further, tsunami resettlement conditions worsened following the declaration of 'buffer zone policy', which restricted the access to the lands lying within 300 to 500m from the sea, depending on the coastal conditions. This policy made many people landless and homeless. Under these conditions, houses were identified as being an urgent need for people. E1 notes that *"people were about to stage a protest, asking for a place to live"*. The sense of urgency at this stage, made the government implemented resettlements as early as it was able; and E3 observes that, as a result, the assistance of national and international non-governmental organisations (NGOs), and their funding were approved for resettlement without due monitoring.

Nevertheless, the government could not house all the people who were affected and in different locations. Hence, the width of the buffer zone was reduced in overpopulated coastal regions. E1 confirms that the *"buffer zone policy was strictly enforced at the very beginning. Later it was reduced to 100-200m based on the crowdedness of the area. The band is 100m in 'Kattankudi', as it is a highly populated area"*. This violated the very purpose of the buffer zone policy as potential for damage is higher in areas with high population density. It is thus fair to assume that such contradictions occurred since the country had no earlier experience of dealing with a tsunami. E3 refers to the situation as one with *"a scale which has never been dealt with"*. Institutional arrangements too were not in place to deal with the situation. E4 endorses this view and adds that the *"disaster management centre was not established by that time and no protocols were available on the subject"*. After the tsunami, the civil war (see Section 2.4) was aggravated and led to further displacements. Besides, the occurrence of landslides and floods, at varying intervals, worsened the situation. Later, resettlement became a popular terminology in the administrative circles so that ministries, legislation, policies, and guidelines were established to address DIDR.

The National Council for Disaster Management was established in 2005 under the Sri Lanka Disaster Management Act, No. 13 of 2005, following the tsunami. Subsequently, in 2007, the Resettlement Authority was founded under the Resettlement Authority Act, No. 09 of 2007. E2 notes that, thus, *"initial tsunami resettlement activities were carried out by the social services ministry and then handed over to relevant authorities"*. Further, according to D1, the National Housing Development Authority also has some powers and functions on resettlement of displaced and likely to be displaced persons. The National Housing Department (1952), the National Housing Development Department (1977), the Greater

Colombo Economic Commission (1977), the Urban Development Authority, and the National Housing Development Department and agencies also retain some authorities to formulate housing policies and carryout housing projects on behalf of the government. Despite the regulations, there are various local and international guidelines available on resettlement, developed by various institutions.

D3, which is the national policy on disaster management, says that the needs of disaster victims have to be addressed according to national and international guidelines. However, according to E4, E5 and E6, the powers held by many statutory bodies, and the surfeit of guidelines and procedures constitute a drawback for efficient implementation. Practically, selecting and following appropriate guidelines and procedures, according to the type of disaster and landscape involved, is challenging. Notably, E6 observes, *"we have many guidelines, laws, and policies. But nothing is integrated. Sometimes one is contradictory to another"*. Consequently, ad hoc and random adaptation of policies and guidelines by various resettlement implementation agencies compromised the quality and longevity of the post-disaster resettlements. Although D3 points out that *"civil societies and private sector organisations involved in risk reduction, disaster mitigation, relief, rehabilitation and reconstruction should obtain the consent of the relevant ministry before engaging in such activities"*, it does not specify the procedures and guidelines that need to be followed. Currently, concerned authorities are attempting to improve this vagueness in DIDR procedures. However, the outcome of interviews indicates that the situation had not improved very much. The gaps identified at policy level based on the above analysis are shown in Figure 13.

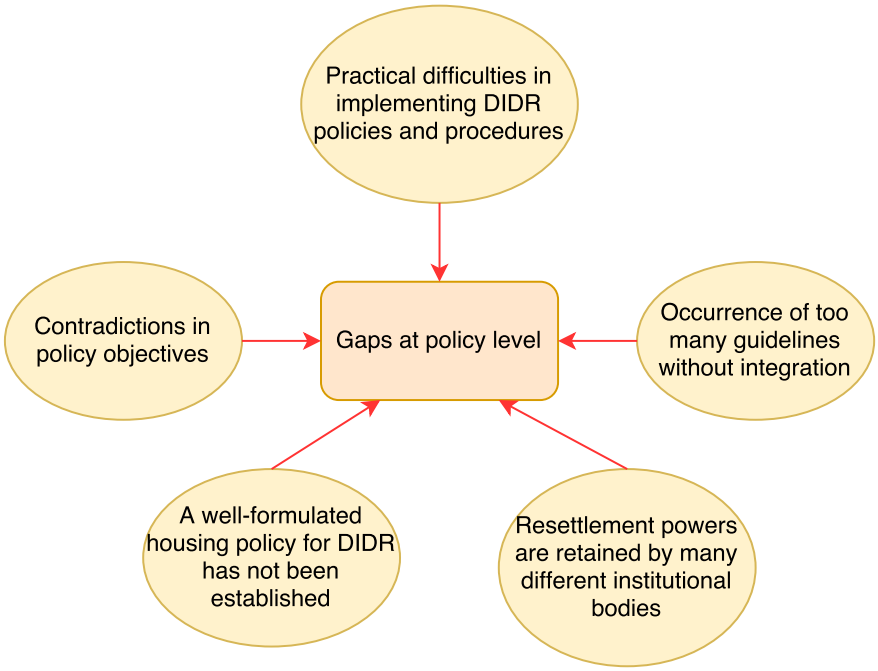


Figure 13: Gaps at policy level

4.3.3 Initial arrangements for resettlement

According to E1, E3, and E4, soon after a disaster that leads to displacement, temporary shelters will be made available to the affected population. According to D1, if the government opts to declare the disaster zone as a prohibited zone, a restricted zone, or a warning zone, feasible alternatives and procedural protection should be guaranteed to the affected population. Here, resettlement becomes the responsibility of the government. Hence, the government then establishes institutional arrangements for decision-making and the execution of resettlement. According to E3 and D2, following decisions to resettle, a district level Steering Committee will be established for the resettlement process under the leadership of District Secretary of each district concerned. Other relevant institutions function as the stakeholders in the process. The institutional responsibilities, as identified by D2, are presented in Table 12.

Table 12: Institutions and their responsibilities

Institution	**Responsibilities**
District Secretariat	Coordination of overall programme
Divisional Secretariat	Coordination of divisional level programmes Beneficiary selection Land acquisition
District Disaster Management Coordination Unit	Assisting the District Secretariat in coordination of overall programme
National Building Research Organisation (NBRO)	Providing recommendations for beneficiary selection, land selection, and land development Designing house plans and budget preparation Providing technical assistance Monitoring land development and house construction
Irrigation Department	Providing recommendations for beneficiary selection, land development, and house design for flood prone areas
Urban Development Authority (UDA)/ National Physical Planning Department	Providing recommendations for land selection, land development, and checking compatibility with current development plans Assisting with development of layout plans Developing land use regulations for new settlements
National Housing Development Authority	Guiding and supervising house construction
Survey Department	Surveying and partition the selected land
Land-use Policy and Planning Department	Providing recommendations for land selection, and land development

	Preparing land use management plans for the resettlement
National Water Supply and Drainage Board Ceylon Electricity Board Road Development Authority	Preparing designs, estimations, and implementations plans for infrastructure development
Local authority	Approving building plans Providing health, water, and sanitation facilities for the settlers
Provincial Council	Evaluation of physical and socio-economic factors for the resettlement

Source: (D2: Implementation framework for resettling landslide and flood victims, 2017)

The current resettlement process, as explained in D2 is as follows: After the appointment of the Steering Committee, beneficiaries of the resettlement will be identified. That will be followed by land selection, land development, and infrastructure development, which will lead to the selection, finalising, and execution of house plans and construction methods. The houses, on completion, will be handed over to the beneficiaries. It is important to note that the process ends with handing over the houses. This points to a lack of consideration of the longevity of the resettlement. Further, it also shows that the resettlement process is treated as a linear process. Resettlement is generally a nonlinear complex process. However, government institutions tend to approach all resettlement in one and the same linear way, irrespective of type of disaster and socio-economic characteristics of the affected community. Muggah (2008) refers to this approach as 'bureaucratic logic'.

A serious criticism by experts E3 and E4 is that the resettlements are not treated as long-term developments. E3 is of the view *"a crisis is a great opportunity as well".* On that note, the new developments offer an opportunity for the betterment of the affected society. However, the sense of urgency, following a disaster, compels a rush in decision-making, with resettlement viewed by officials merely as a process of providing just lands and houses. Schools, public buildings, and temples have been used as immediate temporary post-disaster shelters in Sri Lanka. Such buildings, however, cannot be long-term answers, as they will soon need to be returned for their regular functions. This rushes the government in its resettlement decision-making, imposing a further burden on the process. Besides, although responsibilities are assigned to different institutions, practical difficulties in the coordination and execution obstruct efficient implementation. It is thus important to appreciate that resettlement is a gradual process and haste in decision-making does not actually save time. E3 and E4 point out that lack of preparedness for resettlement is the

key reason for the flaws in the resettlement process, with E4 noting that *"the government is not prepared for resettlements as much as it is prepared for immediate disaster relief"* and E3 adding that competition for power, influence, and corruption also are reasons for implementation issues.

Another important dynamic that shapes resettlement arrangement is funding. Generally, funding arrangements for resettlement are finalised by the government and the efficient execution of all procedures depends on the amount of funding available. Being a financially less stable country, Sri Lanka tends to welcome disaster relief funding from local as well as international organisations. Notably, following the tsunami, Sri Lanka received an overwhelmingly large volume of disaster relief funds and resources, and E3 has noted that *"the sheer volume of aid and the insensitive or careless way in which it was administered led to a sense of waste"*, indicating the careless handling of funds is also a barrier in resettlement initiatives. Thus, D3 argues: *"Fund management and equitable service delivery covering all those who are in need has to be ensured in resettlement implementation programmes"*.

Based on the observation of the experts and the documentation considered, factors that contribute to gaps in the resettlement process have been identified and are shown in Figure 14.

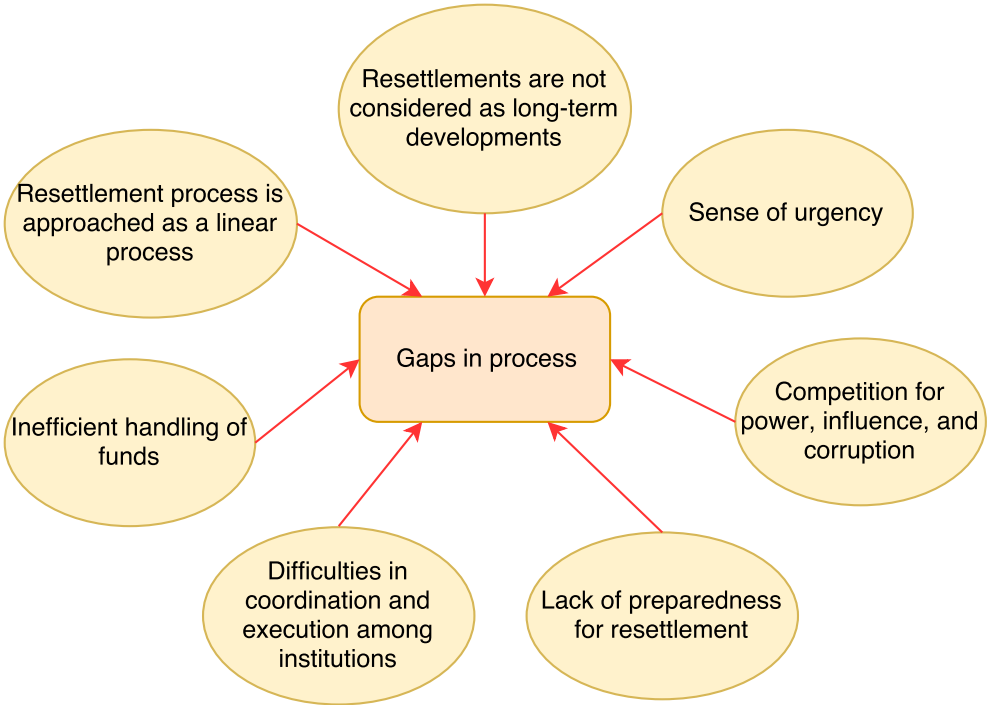


Figure 14: Gaps in implementation process

4.3.4 Land selection criteria

Land selection is the key step in the resettlement process. All the experts agree that the primary criterion for land selection is its resilience against future disasters, since the process concerns disaster affected or potentially vulnerable populations. E1 and E4 argue that the suitability of the location for human habitation and its potential to enhance socio-economic conditions of the affected population should be the second priority. Consistent with this, D1 emphasises that the selected land should be located within 2.5 km from the town centre, and less than 0.5 km from access roads and the water and electricity should be accessible to the location. According to E5 and D1, another important consideration for land selection is its compliance with the planning regulations of the Urban Development Authority as well as conformity with its development plan for the location. The land selection criteria are identified in Figure 15.

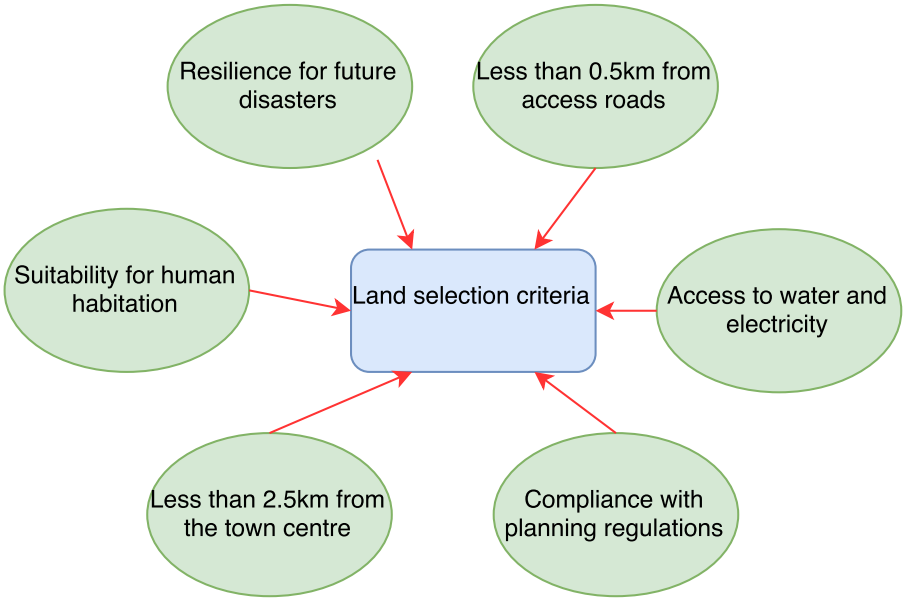


Figure 15: Land selection criteria

As discussed in the Section 5.3.3, the sense of urgency of the DIDR and the limited number of lands available for resettlement restrict officials from meeting all the criteria for land selection. E1 and E4 point out that, generally, the government offers state lands for resettlement in view of the cost and time involved in acquiring private lands. According to D1, although 80% of the land area of the country is owned by the state, 50% of the state-owned land comprises forests, forest reservations and inland waters, and 27% consisting of agricultural lands. This shows that state-owned lands available for resettlement programmes are limited in extent.

Further, the political situation in a country too could have an impact on land selection. E2 notes that, during tsunami resettlements, the process of acquiring/ recreating lands in the northern and eastern regions of Sri Lanka was delayed by the civil war. It should be recognised that the socio-economic conditions of the affected society would militate against accepting lands that are unsuitable for their livelihood. E2 observes in this connection: *"Predominantly, the people who were affected by the tsunami were fishing and they expected a location close to sea"*. E4, E5, and E6 endorse this observation as one from a people's perspective, and agreed that the success of a resettlement depends on how the socio-economic conditions of the victims are addressed. Another instance cited in D4 concerns landslides in Sri Lanka, where most of victims are tea estate workers who live in line houses. Therefore, a salient objective of their resettlement should be social upgrading through providing detached houses.

Besides socio-economic considerations, unsuitable soil, wetlands, slope lands, and proximity to sea are among restrictions on land selection. Satisfaction of all the selection criteria subject to restrictions as mentioned above will be especially challenging when urgency is a key factor. Figure 16 shows the barriers to adhering to the land selection criteria.

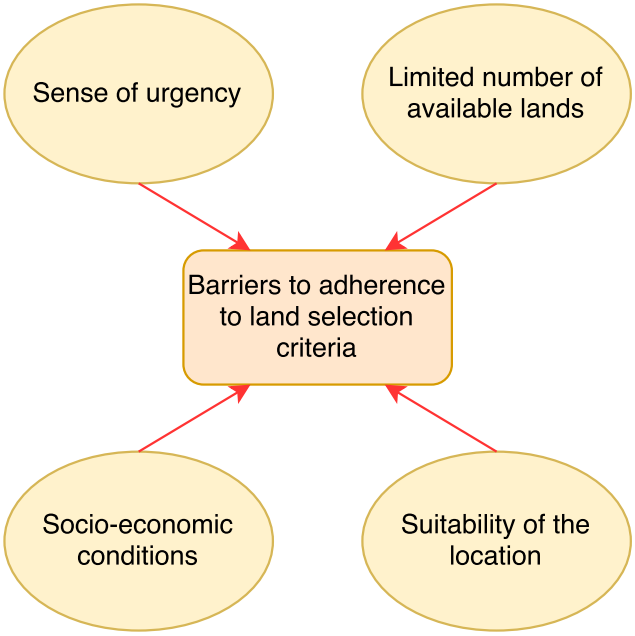


Figure 16: Barriers to adherence to land selection criteria

According to E3, the scale of task of tsunami resettlements prohibited the consideration of any of the above criteria, and availability of land to house a large number of people was the sole operative criterion at that time. In the case of estate workers, E4 notes that the government on occasions delegated responsibility for land selection to the estate

companies and pointed out that the NBRO, to forestall such situations, is now developing a land bank by identifying all available lands for resettlement. This land bank comprises a mechanism to identify and grade lands according to its geography, usage, ownership, socio-economic factors, and demography. The land bank will then be subject to micro study by the government agencies. The land bank, however, still in its initial stages.

4.3.5 Land acquisition

Land acquisition is the central, essential step of the resettlement process, particularly in Sri Lanka, since public buildings including schools and temples are commonly used as temporary shelters. As resettlement is a gradual process, it is not feasible to use public buildings as temporary shelters over a prolonged time. Hence, it is essential that land allocation for resettlement also enables putting up temporary sheds for shelter, and where feasible transform them into permanent houses. This appears to have happened in tsunami resettlements. People displaced by the tsunami were initially scared and found it emotionally difficult to return to their own places. Besides, the buffer zone policy that was already in place further restrained them from returning. In this context, E3 and E4 observe that the government acquired a large extent of land under special conditions and people were moved to temporary sheds allotted to them. In the acquired lands. The sheds were subsequently handed over to NGOs for construction of permanent houses.

E1 has drawn attention to the fact that *"the government does not need to follow land acquisition procedure for state-owned lands. Land acquisition procedure has to be followed if private lands are involved"*. Thus, the government prefers to use state-owned lands for resettlement. However, as discussed in Section 4.3.4, the limited availability of suitable state lands could on occasion compel the government to acquire private lands. D1 explains: *"Where privately owned land is required for resettlement, such land can be acquired under the provisions of the Land Acquisition Act, No. 09 of 1950 upon a certificate issued by the Minister that such land is so required"*. However, the Land Acquisition Act requires that appropriate reasons should be provided to the owner/s of the land to justify utilisation of the land for the public purpose. According to E1, land acquisition procedure for private lands is as follows:

The government can acquire private lands only on a large scale. In which case, firstly, the government needs to identify owner/s of the land and provide reasons for the acquisition, which will be published in the Government Gazette. Then, the Valuation Department assesses the market price and the Survey Department measures the land and confirms the price following which the owner/s are informed of the assessed price and the price quoted by the owner/s is taken note of. If the owner/s disagree with the assessment, they may

appeal to the Land Review Board within 21 days. Once agreement is reached, the Land Ministry will release the funds. The Divisional Secretariat coordinates the process. E1 agrees that *"this is clearly a time-consuming process"*. However, the sense of urgency imposed by DIDR generally deters the government from considering private lands as an option for resettlement. E4 considers the land bank initiative of the NBRO, explained in Section 4.3.4, has the potential to resolve this issue to some degree.

4.3.6 Land allocation

The Survey Department usually deals with land allocation for individual beneficiaries. E4 and D4 point out that lands are subdivided, based on the planned floor area of individual houses. According to D2, subdivision of the land taking into account its slope is recommended for land that is not a flat. D2 also points out that the land is suitable for construction only if the slope is less than 8% (1 in 12.5) and NBRO approval is required for steeper slopes. Plot size per beneficiary is as approved as a government policy based on Cabinet decision. According to D2 and D4, the minimum plot size varies between 7-10 perches (178 to 253 m^2) depending on the location. The minimum required area for housing is 550 square feet (2.02 perches or 51.1 m^2) according to E4 and D4. Although E1 notes that, generally, houses are designed for minimum requirement, E4 points out that *"during tsunami resettlements, depending on the availability of land and funds, some NGOs built houses up to 750 square feet, which later created social imbalances"*.

E1 notes that access roads and connecting pathways between houses are taken into consideration in land subdivision. D4 adds that provisions for water and electricity connection, plots for community centres, child development centres, temples, and other common facilities should also be considered.

4.3.7 Beneficiary selection

As described in Section 2.2 of the literature review, people affected by natural disasters are predominantly from the poorer segments of the society. Thus, expectations of the affected people from the government are high in the matter of housing. However, financially weak governments cannot provide houses for the entire affected population. Thus, need arises for clearly defined beneficiary selection criteria to ensure fair decisions and to maintain the social equity. D5 indicated that, generally, the Divisional Secretariat and the local government authorities coordinate and consolidate beneficiary selection. Thenceforth, the proposed lists are assessed and finalised by the organisations that build the houses.

E1, E2, D4, and D5 explain the eligibility criteria as follows: Primarily, owners of damaged houses located in prohibited zones or high-risk houses located in restricted or warning

zones will be considered for resettlement. Thus, the recipient should own a house with a substantial plot of land to comply with the local authority regulations in any of these zones. Ownership should be approved, and a new house recommended by the 'Grama Niladari' (a public official appointed by the government to carry out administrative duties of subunits of the Divisional Secretariat) or the Divisional Secretary. According to D2, the government adopted a 'house for house' policy for tsunami resettlements, which meant that only the house owners who lost their houses or whose houses had been severely damaged in a disaster get a new house irrespective of the number of families that lived in the lost or damaged houses. D5 is critical of this policy as it had some adverse consequences. While the policy excludes informal residents and illegal squatters of the coastal region, who comprised a considerable section of tsunami victims, it includes wealthy owners who lost several houses, making them eligible to have several houses re-built. Thus, for a fair selection, E1 recommends that *"the priority be given to people who cannot afford to rebuild their houses based on their income or loss of livelihood"*. However, the limited amount of funding makes officials face challenges in screening beneficiaries.

E3 draws attention to the reluctance of government officials to communicate with tsunami-affected communities, as the beneficiary selection difficult as a result of the massive scale of destruction and the large number of people awaiting resettlement. E4 and E6 further add that up-to-date data re the affected population was unavailable at the time and some forgeries were discovered among papers recommending relief to victims. E3, endorsing this observation, complains that the categories developed by the officials to define losses were somewhat arbitrary. Significantly, D1 criticises that *"many others have fallen through the policy gaps and have been forgotten or in some cases purposely discriminated against receiving adequate housing"*. E1 adds that *"a victim's ability to getting things done also plays a key role in securing a house",* because disaster losses create a mental frustration among the affected population and make them lose interest in securing a new house. Thus, some victims were reluctant to following procedure to apply for new houses. This led to social imbalance within the affected community, where one who completely lost the house was refused a new house while a person whose house was partly damaged was given one.

In the case of landslide victims, the affected houses were mostly owned by Regional Plantation Companies (RPCs). Thus, the resettlement programmes were partially funded by grant and the rest were by a loan recoverable from the worker's salary over a period of 15 years. As the programme involved a loan, RPCs were unwilling to include non-workers in resettlement programmes. D4 points out, however, that the RPCs were advised to include affected non-workers too in the programme as a corporate social responsibility. E4

argues that *"the government has to take responsibility for housing if the RPCs disagree to include non-workers in the housing programme"*.

Section 6.5.2 and 6.8.1 gives the reasons for the reluctance of the affected population to be beneficiaries of resettlement and Figure 17 identifies barriers to adherence to beneficiary selection criteria.

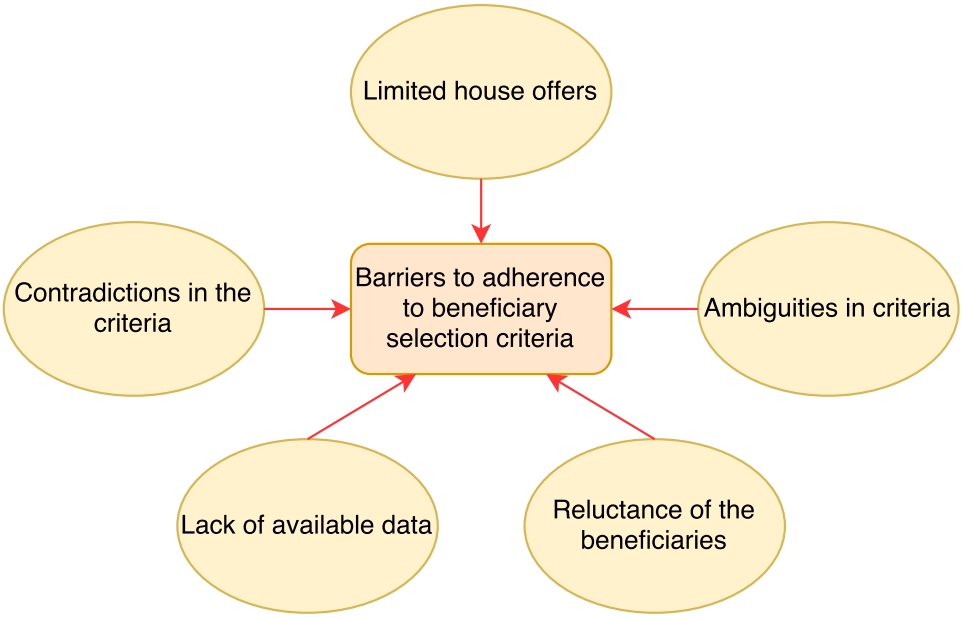


Figure 17: Barriers to adherence to beneficiary selection criteria

4.3.8 House design

According to the Central Bank Survey, as of 2003/2004, 91% of the Sri Lankan population live in single unit houses with an average floor area of 16.8 square meters per person, as stated in D1. Hence, typically, resettlement houses are built as single unit houses. According to E1 and D2, a minimum standard design of a house for a typical family comprises a resilient foundation, a superstructure, two rooms, a kitchen, a permanent roof, a water seal toilet, and a septic tank. The houses are mostly designed by the donors. D2 emphasises, however, that the house designs should conform to the minimum standards laid down and approval obtained prior to building. D2 also states that, since the primary objective of house design for disaster resettlement is resilience in facing future disasters, the NBRO has overall responsibility for designing houses that will be resilient and adaptive to future hazards and disasters. The designs are subject to approval by Parliament and the relevant Cabinet Ministries prior to implementation. Where the resettlement is a compact township, NBRO is required to design resilient houses with the assistance of the UDA. E1, E2, and E3 observe that, mostly, two or three approved designs are repeatedly used in all resettlement programmes. Literature on previous case studies are critical of these house

designs from several perspectives (see Section 2.2.2.1). Sources of some of the shortcomings in house designs based on a top-down perspective as identified by the experts are listed below. It should, however, be noted that house design satisfaction from the beneficiaries' perspective, is somewhat relative.

E3 and E5 have criticised inadequate consideration of factors besides resilience that describe 'adequate' housing in conformity with international norms in the house designs. D1 prescribes that housing adequacy should include legal security of tenure, availability of services, materials, facilities and infrastructure, affordability, habitability, accessibility, location, and cultural adequacy. D1 also acknowledges social, economic, cultural, climatic, and ecological factors as considerations that determine adequacy. E3 and E5 point out that technical perspectives including distance to water sources and conformity with building codes are also inadequately considered in the house designs. E2 asserts that *"the affected population's traditional housing designs have to be considered for resettlement with improved resilient features".* In some cases, however, replication of traditional housing is unacceptable since the important objective of resettlement is social upgrading of the affected population. E1 and E3 argue that it would be beneficial to have provisions for future improvements subject to the requirements of the beneficiaries. E5 proposes the development of special building codes and regulations to address specific disasters. Accordingly, the NBRO and UDA are in the process of jointly developing building regulations and building codes for resilient township as recommended in D2. Figure 18 shows the gaps identified in current house design for resettlement.

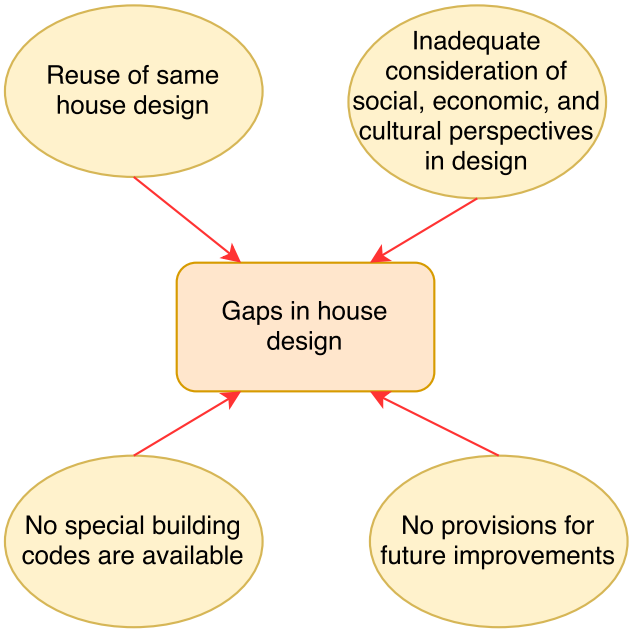


Figure 18: Gaps in house design

4.3.9 Housing construction

Housing construction is considered the most critical stage of a resettlement programme. The two most common approaches to housing construction are namely the owner-driven approach and the donor-driven approach, (Andrew et al., 2013; Chang et al., 2011; Karunasena & Rameezdeen, 2010). While both owner-driven and donor-driven approaches have their benefits and drawbacks, E3 observes that large-scale resettlement programmes prefer donor-driven approach in consideration of the economics of scale and efficiency of management of funds. According to D3 incorporation of resilient features and adherence to 'build back better' principles in reconstruction and rehabilitation programmes are among other reasons to prefer the donor-driven approach. Under the donor-driven approach, the donor appoints a contractor to construct houses based on a pre-defined plan. Therefore, this approach does not allow much room for beneficiary involvement in the construction process. According to E3, in some cases of tsunami resettlement, lands were allotted to the beneficiaries before the houses were constructed, with the beneficiaries given temporary shelters on the allocated land, which were subsequently converted to permanent houses. In such instances, people had opportunity be involved in the construction process and even monitoring it. On the other hand, E1 observed that *"in some cases, contractors construct the houses and handover to the Divisional Secretariat. Beneficiaries are selected after the construction"*. In such contexts, the donor organisations appoint technical officers to monitor construction.

The quality of a house is generally measured based on the construction materials used. According to the Department of census and statistics (2012), 53.1% of houses in Sri Lanka are built of bricks, and 33.8% are built of cement blocks. Resettlement houses are often built of cement blocks as they are cheaper than bricks. Also, as noted by E4 *"quality of the construction materials and workmanship were not closely monitored in donor-driven houses"*. This is consistent with the view of E1 that the incidence of some defects and early deterioration were due to poor quality of materials and poor workmanship. E5 points out that *"this shows poor adherence to building regulations and guidelines"*. In the case of tsunami resettlements especially, most of the donor organisations had left the country shortly after handing over the houses and, as a result, there was no monitoring of post construction and post-occupancy performance of the houses.

According to E3, depending on the funds available, different donor organisations built houses of different quality, contributed to social imbalance in later stages. Moreover, as observed by E1 and E4, potential for modification and extension were not considered in most instances. Regarding time for completion, D4 and D5 are highly critical of donor-driven housing construction for procedural and bureaucratic delays resulting from high-

level meetings, an excess of procedures, and issues of coordination. Sources of the gaps in house construction are identified in Figure 19.

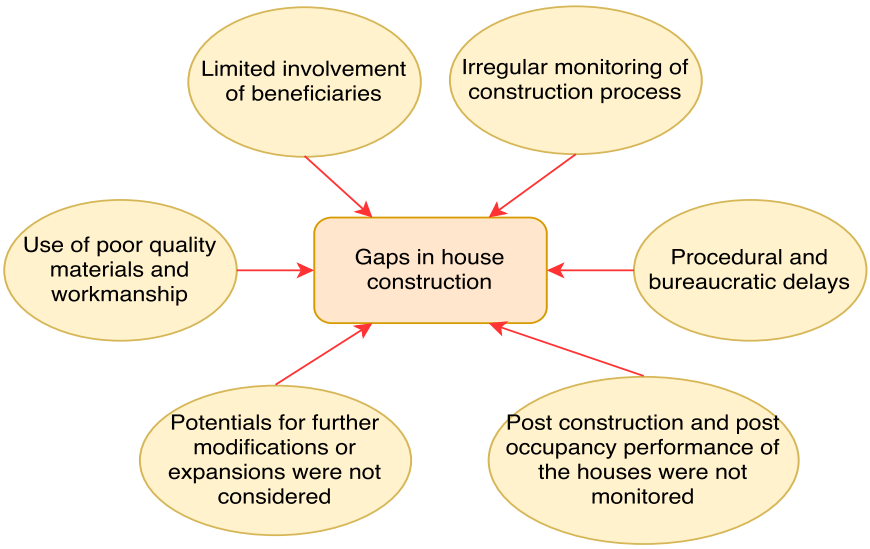


Figure 19: Sources of gaps in house construction

4.3.10 Post-construction and post-occupancy issues

Post-occupancy evaluation is conducted after a considerable period of occupancy to avoid 'newness' bias. E5 points out: *"At the beginning, particularly if it is a resettlement after a displacement, people like to move to new houses"*. The reasons for this initial attraction are the traumatic impressions of their previous places arising from the disaster, fascination towards new houses, lack of facilities in temporary shelters, and want of safer alternatives. Thus, a substantial period has to be allowed for the resettled population to adjust to the new built-environment as it takes some time for the impact of 'newness' to wear off.

All experts agree that resettled communities expressed dissatisfaction after some time, in the event of significant differences between the layout of the new houses and that of their previous houses. E3, E4, E5, and E6 point out that the resettled population very rarely used the houses as given. Most houses underwent subsequent modifications. E6 points to cases where such modifications perturbed the neighbourhood and violated planning regulations. Further, E3 and E4 note that the resettled population experienced an increment in their daily expenses soon following resettlement since a new type of house also meant a new mode of living with cost implications. E3 adds that *"getting informal squatters of the coast committed to a formal house was difficult"*. This means that the financial capacity of some beneficiaries were inadequate to pay for the necessary utilities. In such cases, social upgrading, a primary objective of resettlement programmes, cannot

occur without adequate assistance. Therefore, E5 suggests that beneficiary capacity should be addressed at the start of the programme.

However, as explained in Section 4.3.9, donor organisations do not undertake responsibility to monitor the long-term performance of the facilities provided. Thus, E6 argues that resettlement programmes that follow the same designs and procedures would commit the same unidentified mistakes. E6 further states that *"donor organisations and their employees do not know the local facts. They have to understand that each project is unique"*. Also, the gaps identified in Sections 4.3.8 and 4.3.9 could lead to problems in the long-term. E3 and E4 recommend sufficient consultation with beneficiaries as a means to overcome some of these problems.

4.3.11 Infrastructure development

Physical and social infrastructure is essential to sustain any settlement. E3 considers appropriate infrastructure to be critically important feature that is essential to ensure the social well-being of a community. Generally, the minimum requirement and expectation for physical infrastructure are adequate water and electricity, as recognised in D2. The minimum requirement for social infrastructure varies with the number of units and the size of the resettlement population. The minimum standards for social infrastructure as stated in D2 are listed in Table 13.

Table 13: Standard for social infrastructure

No. of housing units	**Social infrastructure requirement**
Less than 25	Children's park Corner shop
Up to 50	Public open spaces Corner shop Childcare centre Places of worship
More than 50	Parks Playground and recreational facilities Childcare centre Places of worship Education centre Clinic and pharmacy Public transport

Source: (D2: Implementation framework for resettling landslide and flood victims, 2017)

E1, E3, and E4 recommended in addition to these minimum requirements, that a library, post office, bus stand, marketplaces, and community centres are among items of social infrastructure that need to be included in large-scale resettlements. Although E1 and E3 note that the donor organisations are not responsible for providing physical infrastructure facilities, such as electricity, water, access roads, and drainage, some donor organisations have provided social infrastructure subject to availability of funds. E1 has expressed the view that infrastructure development is critical and essential to a resettlement location that was not previously inhabited, and E4 and E5 argue the essentiality of appropriate upgrading of infrastructure of locations already populated with another community, in order to ensure social cohesion and cohabitation.

Social infrastructure such as schools and places for worship offer characteristics that give a sense of belonging to the people. E3 notes that *"access to schools was a big thing when people were displaced".* This is because the resettled children preferred their previous schools to the new school built under the resettlement programme. The quality of teaching in the new schools was found lacking in some cases, and this was among factors including them to seek established schools. Thus, E6 emphasises that planning social infrastructure is critical for long-time satisfaction of the communities. Inadequacies and delays in providing infrastructural facilities are among key contributors to social inequity and resettlement failures. E4 has drawn attention to instances where, owing to inadequacies in water supply and other infrastructural facilities, the resettled community turned out to be a burden on the resources of the host communities.

E4 and E6 also draw attention to considerable delays in providing infrastructural facilities following resettlement. The main reason for the delay is that, generally, the donor organisations only build the houses and the government allocates supplementary funds for infrastructure, which takes time. As a result, NGOs and civil society organisations are encouraged to rehabilitate or establish infrastructure as evident in D3. E6 recommends the establishment of an integrated plan for resettlement including infrastructure development at the start of the programme and executed simultaneously.

4.4 Concerns associated with the top-down approach

4.4.1 Issue of ownership deeds

Deeds of ownership are not provided at the very outset to the resettled population. Initially, they are given a permit of residence to affirm their right to possession of the assigned houses. Deeds of ownership are issued after a considerably long time. Experts identify various reasons for this delay (see Figure 20). One reason is the delay in surveying and dividing the land. Often, large areas of land acquired for resettlement and allocated to

donor organisations for construction. As title deeds require a survey plan of the land specifying the details of all adjoining property. The process of surveying and the preparation of deeds costs time and money. E4 observes that *"the surveying process is not usually included as a resettlement expenditure"*. Thus, where the settlers are reluctant to meet the cost of surveying, separate funding allocation becomes necessary and that takes time.

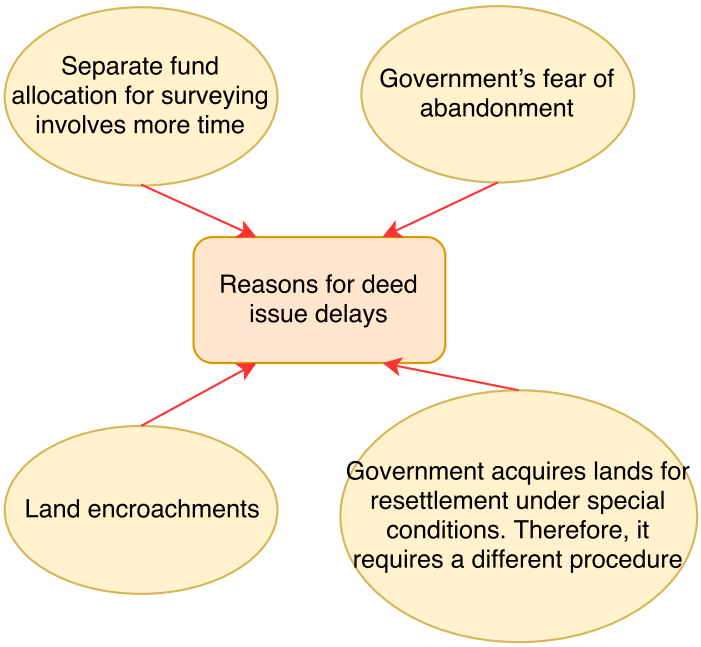


Figure 20: Reasons for delays in issue of deeds

Another stated reason for the delay is the apparent concern of the government about abandonment. The objectives of resettlement programmes include providing compensation, and social upgrading. However, according to D5, a majority of the most vulnerable victims of disasters are illegal squatters who do not own houses or possess formal deeds. Mostly, they are included in resettlement programmes as a social responsibility. Besides, the population whose lands are in restricted zones does not give up their right to their original lands, since the government is unlikely to compensate them fully. In effect, the state has granted them an additional residence. Thus, E1, E2, E3 and E5 are of the view that the government wants to ensure a long-term stay of settlers with clear as well as unclear previous possession. The government delays the issue of deeds of ownership in order to prevent them from making a profit out of the house by selling or renting it, since settlers from both categories have alternate options.

E4 draws attention to another reason, namely that the government acquires lands for resettlement under special conditions and thus transfer of absolute ownership of the state-land to the beneficiaries is not straightforward. By 2016, ten years after the tsunami, the

government started issuing an Outright Grant (ORG) of land for the tsunami settlers. E1 points out that ORG is issued only to the original beneficiary provided that the beneficiary resides in the given house. Residency should be monitored and affirmed by the Grama Niladari (a public official appointed by the government to carry out administrative duties of sub-units of Divisional Secretariat). However, ORG does not constitute absolute ownership by the beneficiary and is subject to conditions including a ten-year curb on the sale of the property, starting from the date of issue of the ORG. E1 and E4, however, point out that some beneficiaries have sold their houses illegally despite the restriction. Such incidents work in favour of delaying the issue of deeds.

Another factor that causes delays in issuing deeds is the land encroachment as noted by E1. Most of the beneficiaries have altered and extended the houses given to them. Failure to define the boundaries clearly at the start, has led to the extension, knowingly or otherwise, of boundary walls into lands belonging neighbours. Such encroachment, once discovered, cases friction as well as difficulties in defining the land area and thus delays the issuing process. E3 remarks, that providing ownership, nevertheless, has potential psychosocial benefit for the perception of the beneficiaries, which would motivate them to stay on.

4.4.2 Communities involved in the resettlement

Resettlement is often viewed from the perspective of the affected population. However, refugee studies have observed resettlement to impose a burden on the host community and consequently, cause dissatisfaction with the built environment (Ager & Strang, 2008). This perspective is seldom spoken of in internal resettlement studies. All experts agree that the host community has to be considered in selecting locations for resettlement. Sri Lanka is a multi-cultural country, and E1 and E2 prefer to avoid religious mixes in resettlements, to avert potential conflict. E1 observes: *"Muslim people cannot be relocated among Hindu people. We always look for locations closer to their own community"*. This statement gives centrality to religion or ethnicity as the main factor to be considered from the perspective of the host community in relation to resettlement. But several other factors relating to the host community are at play in shaping the resettled environment.

E4 points out that *"socioeconomic context of every location is entirely different"*. E3, E4, and E5 note that economy, livelihood activities, adequacy of resources to share, nature of government policies, social behaviour, and caste are among factors that could affect the relationship between host and displaced communities. Successfully coping with and adapting to such differences can be initially challenging for both communities. At times,

the problems remain for a long time. Further, a difference in treatment of the guest community has been widely observed soon following resettlement. For example, E3 notes:

> *"How you are treated in school when you are a displaced child, matters. You are discriminated against…, if anything goes missing you are blamed. Or you may be poor because you have lost so much. Many displaced children resulted in… they are dropping out of school because of these reasons"*.

E4 also points to scenarios where disparities have led to conflict between communities. E3 adds that the complications are worse if the resettlement includes people from a different village or community and suggests as a solution that social connection strategies are followed when allocating houses, such as locating relatives near each other, accommodating disabled people closer to the main road, and the like. E2 reports some instances where the host community blamed the guest community for some incidents of drug dealings and burglary. Moreover, E3 points out that, in the context of Sri Lanka during the tsunami, conflicts that were going on in parallel shaped the dynamics of the communities differently and posed a security threat to guest communities. However, implantation agencies do not take actions to educate the communities on coping social structure and behavioural changes.

Further, the host community's capacity and willingness to accommodate a new community is essential to maintain social cohesion and cohabitation. E4 observes that *"most of the times the new houses are given only for the affected people. In that case, if the neighbouring villages does not have well constructed houses, it may be widening the social cohesion between both communities".* Also, community centres, schools, and other social infrastructure built under resettlement schemes are generally not planned with the host community in mind. Thus, E3 and E5 recommended that social connection facilitation activities need boosting at the initial stages of resettlement to facilitate normalisation, which will later find its course. E6 further recommends making the host community informed and involved from the outset of resettlement.

4.4.3 Community consultation

Community consultation and participation as an approach to large-group housing has been well researched and well received. However, additional dimensions enter the context of disaster resettlements. E3 and E4 comment on the sense of urgency felt by officials in the wake of a disaster irrespective of the feelings of the people who have been affected. Thus, the decisions on location and types of shelter are made at speed on behalf of affected communities without consultation. E3 and E5 note that consultation with communities was either absent or inadequate during tsunami resettlements. E3 notes that *"it has been*

terrible to witness the decisions being implemented with displaced people… being loaded into trucks to new locations with neither adequate prior information". Further, some places struck by the tsunami had a militarised context and there was potential to use force to move people already living there. However, the situation improved following criticism by concerned activists. Besides, D1 and D3 urge national and sub-national institutions to recognise the right of communities and the public to receive information on activities designed to re-establish them following a disaster. Particularly, when a large group of people is forcibly evicted, consultation is essential in matters of legal remedy and compensation.

Although community consultation is much desired, experts report arguments about practical difficulties (See Figure 21). E2 observes: *"First of all, people are not voluntary for the resettlement, which affects their motivation for participation"*. E1, E2 and E4 add that community consultation involves time. Further, addressing all requirements of a large group of people is impractical owing to the limited availability of lands and funding. E1, E2, and E4 are under the impression that community consultation for encourage greed in people by creating a culture of dependence on the government. Further, collective decision-making on behalf of the entire affected community had another complication in the case of tsunami resettlements owing to the resettlement of people from different places together were in a single location since the people were accustomed to different types of houses. Accordingly, the design, quality, and the money spent on a house varied. E5 also draws attention to lack of coordination in community consultation during as different institutions were involved in planning, construction, and implementation.

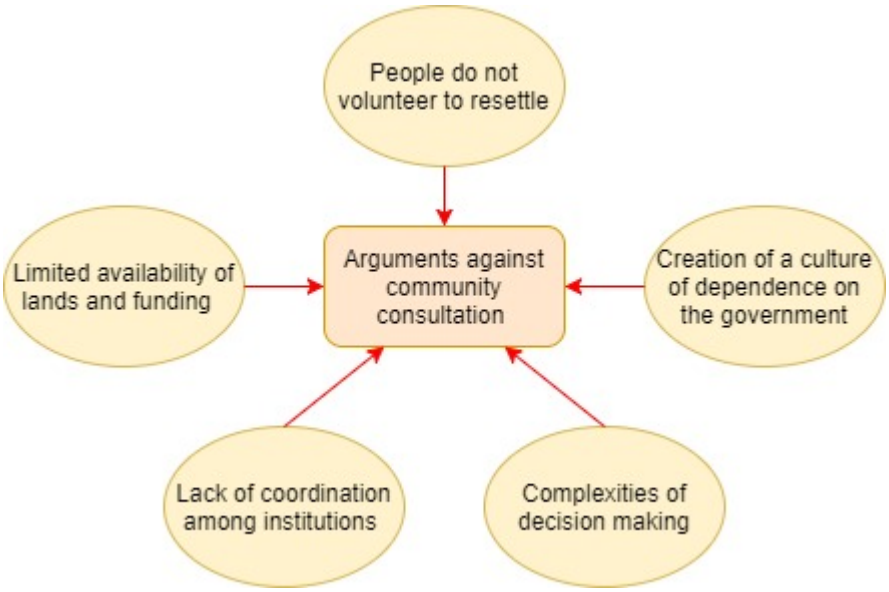


Figure 21: Arguments against community consultation

In contrast, E3 stated that community consultation and analysing information might seem impossible or difficult if dealt with in an ad-hoc fashion. Well-defined methods for adequate consultation from asking questions to analysing information should be developed and have to be carried out by skilled officials. E5 and E6 recommended having a balance between decisions which have to be made by the professionals (such as resilient features, adherence to climate changes, and alike) and decisions which need input of communities. However, the process needs to be transparent and the people have to be informed what can be provided.

E3 and E5 emphasised that the community participation through the information and the role given to the communities, their ability to make decisions, their involvement in construction, and the legal assistance provided to them would provide psychosocial benefits to the people and make them feel an ownership towards the new resettlements. Further, E4 and E6 recognised the importance of host community consultation in the resettlement implementation process. Host community's inputs regarding local knowledge for construction, and indigenous methods of recovery for climate and disasters will be beneficial. Host community consultation also helps early identification of some of the potential grievances. Therefore, addressing those at the stage of planning and implementation could make the resettlement more cohesive. E4 further stated that in some cases host communities also received new houses as they were involved in the process. Resettlement is anyway a time-consuming process. Thus, allocating appropriate temporary or semi-permanent shelters for the displaced people would reduce the sense of urgency and allow some time for proper execution of resettlement with adequate community engagement, according to E3.

4.4.4 Abandonment of houses

Several studies have shown that post-disaster resettlements on the whole has failed in Sri Lanka, with prevalence of abandonment of houses by the beneficiaries (Manatunge & Abeysinghe, 2017; Manatunge et al., 2009; Muggah, 2008; Perera et al., 2012; Takesada et al., 2009). Experts agree that housing is identified as an urgent need soon after a disaster. Although various reasons have been identified for abandonment, experts attributed several of them to the top-down procedure. Firstly, owing to government policies concerning prohibited zones, restricted zones, and warning zones, resettlement was mostly involuntary. E2 notes that *"these policies make the houses an essential need at the beginning, but their rigorousness does not last long"*. Inefficient execution of policies made the prohibited lands available to former occupants as a long-term option.

People who receive the houses after a resettlement often represent the poorer segments of society. E1 and E3 note that, therefore, they view the houses as tradable assets and tend to make economic gain out of them by selling or letting. E1 lists a number of initiatives by the government to prevent the transfer of ownership of houses. They include the introduction of conditions of ownership and delaying the issue of ownership deeds. All experts recognise abandonment as a function of people's livelihood. Social structure, economic structure, and location are closely linked with each other. Resettling in an entirely different location will have an impact on livelihood and thus on how people relate to the above structures. E3 endorses this view: *"Suddenly, losing the skills that gave their livelihood, ability, identity, daily routine, people that they work with, will give serious impact on their sense of wellbeing"*. In addition to livelihood, poor access to schools, hospitals, the nearest town and other social infrastructure are also pointed to by the experts as reasons for abandonment. Further, estrangement from a familiar environment, decline in life standard, and loss of social network are among reasons referred to. E4 states that in some instances people had high expectations and, subsequently, realised that the authorities failed to fully honour their promises. This made them feel inadequately compensated for the prohibited land that they lost.

However, as explained by E2, government authorities are taking steps to address the impacts of the disaster and achieve the purpose of resettlement. Further, the government expects that its actions will persuade people that the resettlements are the safest places for them to live. However, the authorities should firstly identify the need for housing correctly. Moreover, to sustain the resettlement, steps need to be taken to make disaster preparedness a community culture.

4.5 Discussion

Exploring current procedure and policy requirements followed by the Sri Lankan government/ resettlement agencies in implementing post-disaster resettlements is one of the objectives of this study. According to literature (see Section 2.1.2) disaster-induced resettlements have a dynamics of context that is entirely different from that of other types of resettlement. The analysis also conceded that although Sri Lanka has experienced a variety of resettlements from prehistoric times, disaster-induced resettlement is rather to the country, and at infancy level without an established model for implementation. Further, the findings of the study are that conditions have improved very much compared to those at the time of 2004 Indian Ocean tsunami. There are, however, some gaps in the current procedure based on a top-down approach and problems related to such procedures. A summary of the analysis is presented in Table 14.

Table 14: Gaps and barriers of the top-down resettlement process

Stage of resettlement	Gaps/barriers
Policy level	Practical difficulties in implementing policies and procedures
	Contradictions in policy objectives
	No well-formulated housing policy for DIDR
	Existence of too many guidelines without integration
	Retention of resettlement powers by several institutional bodies
	Practical difficulties in implementing policies and procedures
Implementation	Not considering resettlements as long-term developments
	Approaching the resettlement process linearly
	Inefficient handling of funds
	Lack of preparedness for resettlement
	Difficulties in the coordination and execution among institutions
	Sense of urgency
	Competition for power and influence, and corruption
Adhering land selection criteria	Sense of urgency
	Limited number of available lands
	Non-consideration of suitability of location
	Non-consideration of socio-economic conditions
Adhering beneficiary selection criteria	Contradictions in the criteria
	Ambiguities in the criteria
	Limited number of house offers by the funding organisations
	Lack of available data
	Reluctance of beneficiaries
House design	Repeated use of the same house design
	Unavailability of special building codes for resilient resettlement
	No provisions for future improvements
	Inadequate consideration of social, economic, and cultural perspectives in design
House construction	Irregular monitoring of the construction process
	Failure to monitor post-construction and post occupancy performance of the houses

	Ignoring potential for further modifications or extensions
	Use of poor quality materials and workmanship
	Limited involvement of beneficiaries
	Procedural and bureaucratic delays
Delays in issuing ownership deeds	Delays in separate fund allocation for surveying
	Government's fear of abandonment
	Land encroachment
	Acquisition of lands by government under special conditions, and need special procedures
Not involving communities in the procedure	Limited availability of lands and funding
	Lack of coordination among institutions
	Collective decision making is complicated
	Creates culture of dependency on the government
	People do not volunteer for the resettlement

A study in post-tsunami Banda Aceh, Indonesia by Chang et al. (2011) replicates some of the above findings. Lack of coordination between implementing agencies, the absence of in-house competence for large-scale construction, and lack of investment are among such factors, which are prioritised. Another study conducted by Jigyasu and Upadhyay (2016) in post-earthquake Marathwada, India also reported some findings that have a bearing on the Sri Lankan context. Repeated use of the same house design, inadequate consideration for social, economic, and cultural perspectives in design, use of unfamiliar materials and poor workmanship are among main weaknesses found by the study. A study by Badri et al. (2006) in post-earthquake Manjil, Iran also reports similar observations. This shows that issues faced by developing countries have much in common including some of the serious gaps and barriers identified in Sri Lanka's top-down process.

Section 2.4 of the Literature Survey refers to legislation and the policies in Sri Lanka that include and address all likely issues associated with the displacement and resettlement. However, findings at ground level identify difficulties in meeting requirements since disaster recovery projects have disaster-specific characteristics concerning emergent strategies, uncertainty, time urgency, community vulnerability and stakeholder issues (Lin et al., 2016). The study of Mannakkara and Wilkinson (2016) prescribes switching from the traditional government-led approach to the establishment of a separate institution for recovery too overcome the issues, as now practised in Japan after its 2011 tsunami.

Notably, governments of developed countries, such as the United States, do not reconstruct private houses (Ganapati, 2016). Spain, UK, New Zealand, and France have insurance programmes to deal with loss of houses owing to natural disaster (Freeman, 2004). The government of Sri Lanka, however, being a financially weak developing country, is not in a position to adopt solutions of the aforesaid kind. Thus, in the context of a developing country, protection and rehabilitation of a disaster-affected population is widely seen as a duty of the government (Freeman, 2004). Further, Lyons (2009) observes that in developing countries only the government possess the capacity to handle the scale of fund needed for post-disaster housing. Consequently, prospects of decentralising power and handling of funds are poor. Hence, finding a solution for each identified issue is essential for effective implementation. The final framework (see Chapter 8) of this study is an attempt to propose strategic level solutions to overcome the gaps and barriers identified in this chapter.

4.6 Summary and link

This chapter explains the gaps and barriers identified in each stage of resettlement process. Document analysis and interviews were analysed in this chapter in order to achieve one of the objectives, namely exploration of the the gaps in current procedures and policy requirements that are followed by the Sri Lankan government/ resettlement agencies during planning and implementation of resettlements. The results show that initial arrangements, land selection, land acquisition, land allocation, beneficiary selection, house design, house construction, post-occupancy evaluation, and infrastructure development comprised the basic steps of resettlement, carried out in various sub-stages determined by the context. The analysis identified gaps and barriers at each stage with negative consequences for the outcome. Next chapter explains the analysis of questionnaire survey.

Chapter 5 : Built environment adaptability in resettlements

Chapter 4 presented data analysis of documents and expert interviews to identify the top-down procedures. This chapter presents and interprets the questionnaire survey data collected for identifying the obstacles and barriers faced by the communities in adapting to a new built-environment. The chapter first describes the procedures adopted for the questionnaire survey analysis, and then presents the analysis and interpretations of the data.

5.1 Background and procedures used in questionnaire analysis

Questionnaire survey has long asserted itself as an essential tool of social research to conceptualise the relationships between variables (Punch, 2003). The present questionnaire survey was designed to verify and validate the relevance of the 14 identified built-environment adaptability issues (see Section 2.2.2) in the post-disaster resettlement context. Two parallel Likert-scale questionnaire surveys were conducted among resettled and host communities at Batticaloa and Jaffna in Sri Lanka between June 2016 and August 2016. The 14 identified built-environment adaptability issues were further sub-categorised for clarity (see Table 15 for the list of issues), and a total of 19 built-environment adaptability issues were presented for scaling by the resettled communities. On the other hand, 10 built-environment adaptability issues relevant to the host communities were identified for scaling based on the list, by eliminating items 1-5, 7, 16, 18 and 19, which were not applicable to the host community. (See Appendix 1 and 2 for questionnaires). In all, 186 questionnaires were collected, of which 110 are from resettled communities, and 76 from host communities. The collected demographic data were analysed using MS Excel software, and the Likert-scale data were analysed using SPSS software.

Table 15: Built-environment adaptability issues

Resettled community issues		**Host community issues**	
1	Climate adaptability of the house*		-
2	Comfort of the house*		-
3	Completeness and capacity*		-
4	Operational cost*		-
5	Space availability*		-
6	Availability of communal space	1	Availability of communal space

7	Ability to maintain the house*		-
8	Ability to expand	2	Reduction in common resources
9	Access to drinking water	3	Access to drinking water
10	Availability of electricity	4	Availability of electricity
11	Adequate waste disposal	5	Waste disposal and sanitation
12	Availability of schools	6	Availability of schools
13	Proximity to main road	7	Proximity to the main road
14	Availability of hospitals	8	Availability of hospitals
15	Hospitality of the host	9	Relationship with new community
16	Environmental changes*		-
17	Land use patterns	10	Changes in land use patterns
18	Land ownership title*		-
19	Distance to previous location*		-

* Issues specific to resettled community

5.2 Demographics and descriptions of the respondents

Presenting the demographics and descriptions of the respondents is essential to contextualise the nature of the responses and credibility of the data. Accordingly, the following sections describe the respondents' age, the number of family members, occupation, pre-disaster housing and livelihood, post-disaster housing and livelihood, and distance to the workplace and previous location.

5.2.1 Demographics

Age is an essential demographic variable in any study. The age distributions of both resettled and host community respondents are comparable with the age group between 36 and 60 comprising the bulk in each. This age group can be considered to be of middle age and representing people who are likely heads of families. Figure 22 presents the age distributions as pie charts.

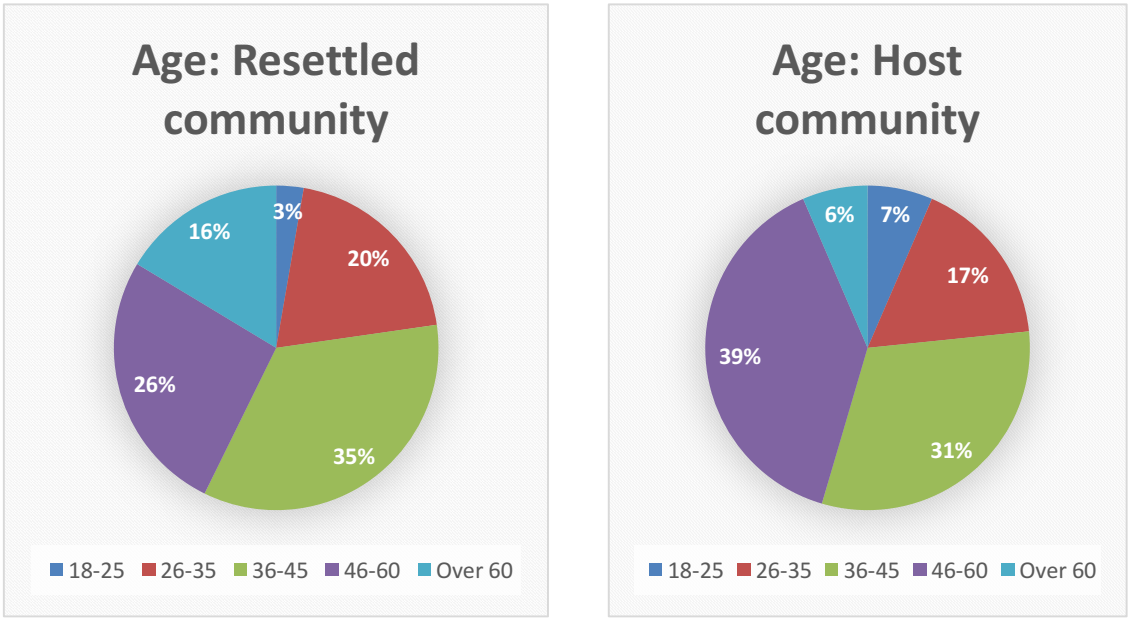


Figure 22: Age distribution of the respondents

The number of family members of the respondents is considered an essential demographic variable for this study since a 'one size fits all' policy is generally followed in resettlement housing. Figure 23 shows the distribution of number of family members for the respondents.

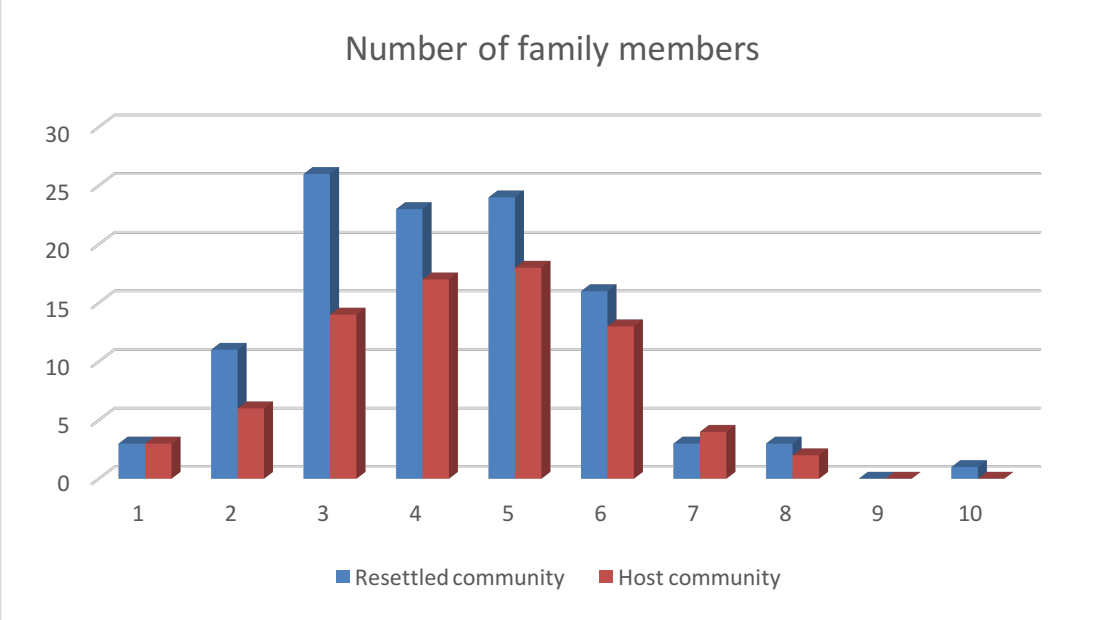


Figure 23: Number of family members

The numbers range between 1 and 10 and have a normal distribution with the peak in the range from 3 to 5 for the resettled community and at 5 for the host community. Quarantelli

(1995) suggests that family structure could change after a disaster from the traditional family units to single-parent families, childless parents, or single person units. Although such bias is evident in Figure 2, a comparison of the distributions for the host and resettled communities does not reflect a strong difference in family composition.

Regarding occupation, 46% of the resettled community and 53% of the host community work as 'Coolies' (informal daily-paid workers). Fishing, small businesses, cultivation, and housekeeping are among other frequently mentioned occupations for both groups. This shows that the resettled communities as well as their host belong to substandard layers of the society. This finding agrees with the view of Cannon (2008), who considers all disasters as 'socially constructed' since vulnerability to disaster is an outcome of poverty. For the selected sample, the financial status of the host communities is much like that of the resettled communities.

5.2.2 Pre and post-resettlement housing and livelihood of the resettled communities

Since the insufficiency of land plots is one of the major complains in resettlements, data on land area occupied by the resettled communities prior to the disaster were obtained for comparison with the post-disaster land plot allocation. Figure 24 shows the distribution of land area occupied by settlers before the disaster.

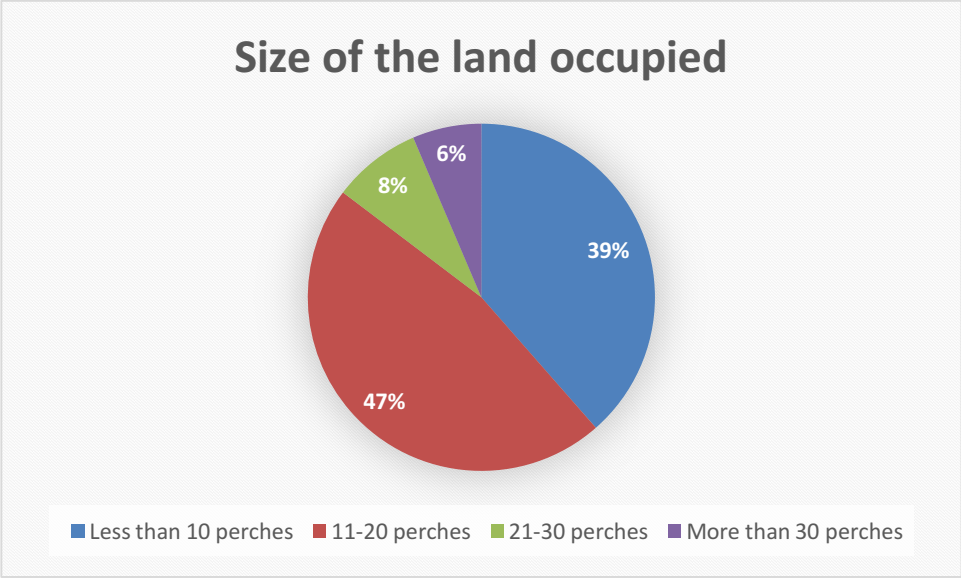


Figure 24: Size of the land occupied prior to the disaster

The figure shows that 47% of the respondents occupied extents between 11 and 20 perches (0.0253 Ha), and 14% occupied more than 20 perches (0.0506 Ha) of land. Satisfactoriness of the compensated land will, however, depend on what was owned before

the disaster. Further, the median number of rooms per house was two (02) before the resettlement, which remains the same after the resettlement.

Figure 25 shows a comparison of the availability of basic household amenities such as electricity, drinking water, gas, and telephone in the pre- and post-resettlement contexts of the settlers. It is evident from the figure that the availability of all basic household amenities have improved following resettlement. Notably, availability of electricity and telephone show remarkable improvement, with availability of electricity reaching almost 100%.

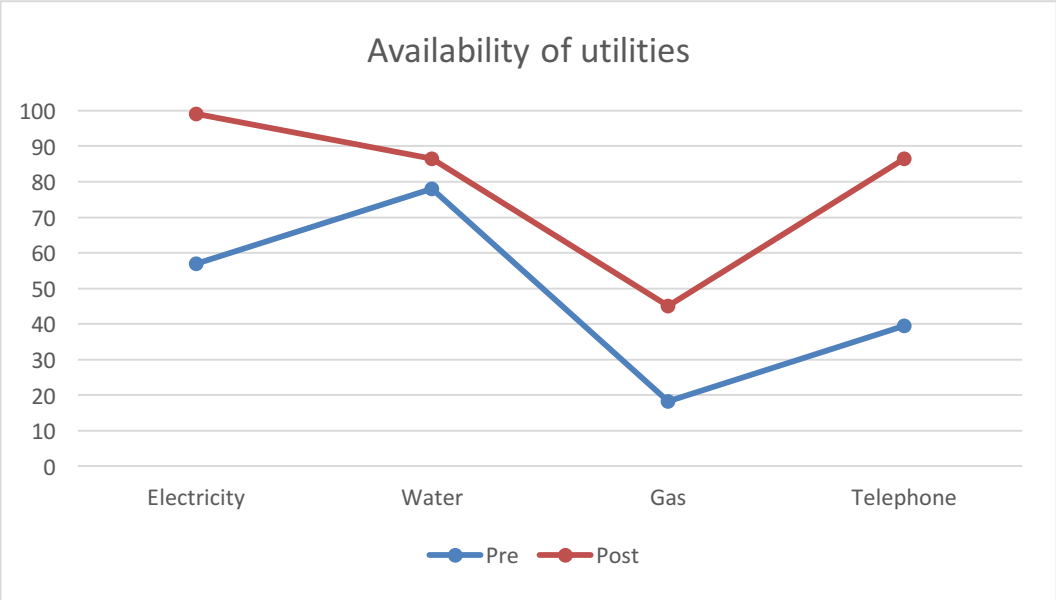


Figure 25: Availability of utilities before and after the resettlement

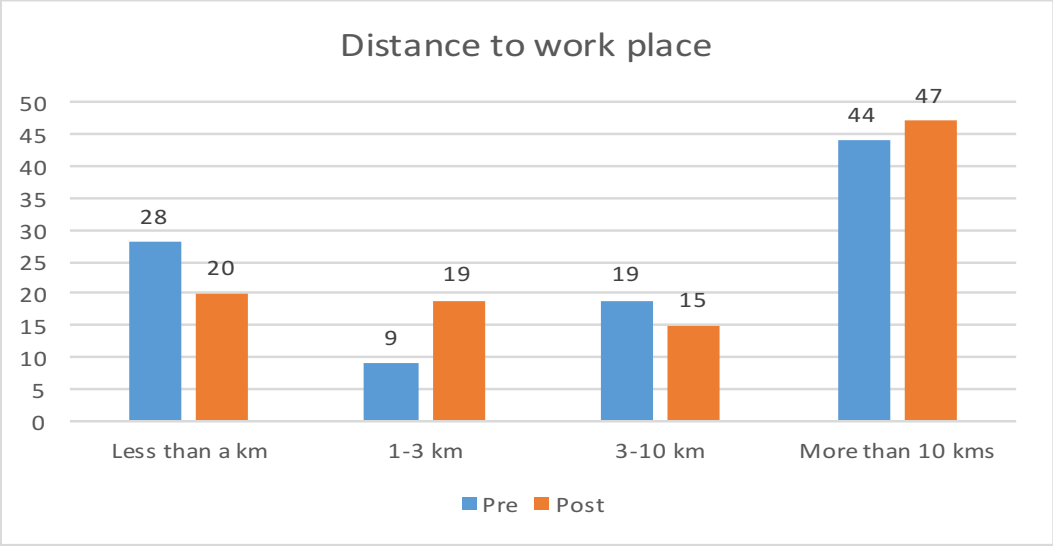


Figure 26: Distance to workplace before and after the resettlement

Studies show that the distance to the workplace/ livelihood is a primary reason for resettlement failures (Jordan et al., 2015; Pardeshi & Mahajan, 2016). Hence, the change in the distance to workplace was analysed to assess its impact on resettlements. Figure 26 shows the comparison. The figure shows a general increase in the distance to the workplace. It should, however, be noted that even before resettlement a sizeable number used to work in places further than 10 km from home.

5.3 Factor analysis

Factor analysis is a statistical method widely used in social sciences, and comprises a number of statistical techniques to simplify the processing of complex sets of data (Kline, 1994). The main three uses of factor analysis are understanding the structure of a set of variables, measuring underlying variables, and reducing data to a manageable size (Field, 2007). Several methods exist to extract factors from data, the most common being exploratory factor analysis and confirmatory factor analysis. Exploratory factor analysis may be conducted in instances where the expectations of the researcher about the underlying structure of correlations are somewhat unclear. Confirmatory factor analysis, on the other hand, can be performed in instances where the researcher has precise foreknowledge of the number of common factors (Fabrigar & Wegener, 2012). The factor analysis for the present study aims at identifying the underlying structure of the built-environment adaptability issues, based on the 19 built-environment adaptability issues identifies from the literature review for the resettled communities and the 10 built-environment adaptability issues for the host communities (see Section 2.2.2). As no clear prediction or hypothesis exist for the underlying factors, an exploratory factor analysis is used in the present study.

5.3.1 Reliability of scale

It is desirable to estimate the reliability of test scores prior to factor analysis. Helms et al. (2006) define the reliability as the extent to which the sample patterns of responses to items are consistent across the items. SPSS software offers Cronbach's alpha test, based on an 'internal consistency' coefficient, which is the most frequently used reliability coefficient test (Cho & Kim, 2015). Generally, reliability coefficients range from 0.00 to 1.00, whereas, it may reach negative values if the sample participants' responses to scale items are multidimensional or inversely related (Helms et al., 2006). Cronbach (1951) recommends the satisfactory value to be greater than 0.6. Table 16 shows the Cronbach's alpha test for resettled and host community responses respectively. Both tests display a value greater than 0.6 (0.753 and 0.636). This shows that the sample patterns of responses are consistent across the items.

Table 16: Reliability of scale

Reliability Statistics

	Cronbach's Alpha	No of Items
Resettled community	0.753	19
Host community	0.636	10

5.3.2 Sampling

Scholars adapt various methods to determine the sample size for the factor analysis, mostly, definite numbers based on expert experiences and recommendations. For example, Field (2007) suggests 10 to 15 participants per variable, while Nunnally (1967); and Tinsley and Kass (1979) recommend 5 to 10 participants per variable for up to 300 participants. Guadagnoli and Velicer (1988) argue that the sample size used is adequate if 4 or more communality values exceed 0.6, and recommend the use of more than 150 samples if 10 or more communality values exceed 0.4. However, MacCallum, Widaman, Zhang, and Hong (1999) argue that fewer than 100 samples will be adequate if communality values, which represent the proportion of common variance in a variable that is shared with other variable as explained by Field (2007), exceed 0.6.

Generally, the factor solution should explain at least half of each original variable's variance, so the communality value for each variable should be 0.5 or higher. Based on the views expressed in the preceding paragraph, it is concluded that the use of more than 100 samples is desirable provided that the sample satisfies the factor loading and communality requirements. Furthermore, SPSS statistical software offers a test for sample adequacy known as Kaiser–Meyer–Olkin (KMO) test, which recommends that the value of KMO should be greater than 0.5.

Accordingly, the expected sample size for this study is 200 comprising around 100 from each community, and thus, 240 questionnaires were distributed to allow 20% possibility for unreturned and incomplete responses. The number of returned and usable questionnaires is 188, which includes 111 from resettled communities and 77 from host communities. In order to test the sample adequacy, KMO test and Bartlett’s test of sphericity are performed. Further, communalities values are examined separately to validate the sample adequacy.

Table 17 shows the KMO and Bartlett’s tests results for samples form resettled and displaced communities, respectively. In both the cases, the value of KMO measures of sample adequacy (0.531 and 0.682) and significance value of Bartlett’s test (0.000) justified the use of factor analysis as a data reduction technique.

Table 17: KMO and Bartlette's tests

KMO and Bartlett's Test

		Resettled community	Host community
Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.531	0.682
Bartlett's Test of Sphericity	Approx. Chi-Square	445.7	170.3
	Degrees of freedom (df)	171	45
	Level of significance (p)	0.000	0.000

The communality is then computed for all variables. There are various methods available to compute communalities. Field (2007) recommends the principal component analysis as most appropriate method since it is a psychometrically sound and a conceptually less complex procedure than factor analysis with several similarities to discriminant analysis. Thus, the principal component analysis was conducted in this study to compute communalities. Table 18 and Table 19 show the principal component analysis for resettled and host communities, respectively. Field (2007) suggests that communalities should desirably between 0.5 and 0.9 for adequate sampling.

Table 18: Principal component analysis: Resettled communities

Communalities

	Initial	Extraction
Climate adaptability of the house	1.000	0.586
Comfort of the house	1.000	0.844
Completeness and capacity	1.000	0.889
Operational cost	1.000	0.848
Space availability	1.000	0.692
Availability of communal space	1.000	0.817
Ability to maintain the house	1.000	0.677
Ability to expand	1.000	0.800
Access to drinking water	1.000	0.748
Availability of electricity	1.000	0.486
Adequate waste disposal	1.000	0.726
Availability of schools	1.000	0.761
Proximity to main road	1.000	0.861
Availability of hospitals	1.000	0.860
Hospitality of the host	1.000	0.769

Environmental changes	1.000	0.706
Land use patterns	1.000	0.695
Land ownership title	1.000	0.378
Distance to previous location	1.000	0.677

Extraction Method: Principal Component Analysis.

Table 19: Principal component analysis: Host communities

Communalities

	Initial	Extraction
Availability of communal space	1.000	0.726
Access to drinking water	1.000	0.681
Availability of electricity	1.000	0.912
Waste disposal and sanitation	1.000	0.443
Availability of schools	1.000	0.675
Proximity to the main road	1.000	0.821
Availability of hospitals	1.000	0.738
Changes in land use patterns	1.000	0.813
Relationship with new community	1.000	0.654
Reduction in common resources	1.000	0.602

Extraction Method: Principal Component Analysis.

Communality values for the variables 'availability of electricity' (0.486) and 'land ownership title' (0.378) for the resettled community and 'waste disposal and sanitation' (0.443) from host community are less than 0.5. Hence, the principal component analysis was conducted again with these three variables removed. Table 20 and Table 21 show the revised principal component analysis after removal of the said variables.

Table 20: Principal component analysis after correction: Resettled communities

Communalities

	Initial	Extraction
Climate adaptability of the house	1.000	0.601
Comfort of the house	1.000	0.851
Completeness and capacity	1.000	0.876
Operational cost	1.000	0.846
Space availability	1.000	0.707

Availability of communal space	1.000	0.822
Ability to maintain the house	1.000	0.735
Ability to expand	1.000	0.807
Access to drinking water	1.000	0.804
Adequate waste disposal	1.000	0.721
Availability of schools	1.000	0.764
Proximity to main road	1.000	0.848
Availability of hospitals	1.000	0.854
Hospitality of the host	1.000	0.738
Environmental changes	1.000	0.782
Land use patterns	1.000	0.740
Distance to previous location	1.000	0.671

Extraction Method: Principal Component Analysis.

Table 21: Principal component analysis after correction: Host communities

Communalities

	Initial	Extraction
Availability of communal space	1.000	0.744
Access to drinking water	1.000	0.683
Availability of electricity	1.000	0.921
Availability of schools	1.000	0.697
Proximity to the main road	1.000	0.835
Availability of hospitals	1.000	0.769
Changes in land use patterns	1.000	0.810
Relationship with new community	1.000	0.664
Reduction in common resources	1.000	0.602

Extraction Method: Principal Component Analysis.

Samples of all the factors have thus become adequate, after the removal of variables with communality value less than 0.5.

5.3.3 Factor extraction

Not all the factors are retained in the analysis, since it is logical to retain only factors with significant eigenvalues. Factor extraction is computed by calculating the eigenvalues of the R-matrix (R-matrix is a table of correlation coefficients between variables). SPSS, by default, satisfies Kaiser's criterion of retaining factors with eigenvalue greater than 1. The

eigenvalue associated with each factor represents the variance corresponding to a specific linear component (Field, 2007). SPSS also yields eigenvalues in terms of the percentage of variance explained. For example, Factor 1 in Table 22 explains 24.4% of the total variance. It is, however, necessary to determine whether the eigenvalue is adequately large to represent a factor. A widely used technique to determine adequacy is to plot a graph showing each eigenvalue (Y-axis) against the factor associated with it (X-axis), usually known as scree plot (Nimalathasan, 2009). Field (2007) argues that the cut-off point for selecting factors should be the point of inflexion of the curve, the point at which the curvature of the line changes direction. Accordingly, six (06) factors from resettled community responses and four (04) factors from host community responses can be extracted. Table 22 and Table 23 shows the factor extractions for resettled and host communities respectively. Further, Figure 27 and Figure 28 display the scree plot for both resettled and host communities sequentially.

Table 22: Factor extraction: Resettled community

Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative variance %	Total	% of Variance	Cumulative variance %
1	4.107	24.2	24.2	4.107	24.2	24.2
2	3.179	18.7	42.9	3.179	18.7	42.9
3	2.017	11.9	54.7	2.017	11.9	54.7
4	1.602	9.4	64.1	1.602	9.4	64.1
5	1.161	6.8	71.0	1.161	6.8	71.0
6	1.101	6.5	77.5	1.101	6.5	77.5
7	0.829	4.9	82.3			
8	0.653	3.8	86.2			
9	0.526	3.1	89.3			
10	0.429	2.5	91.8			
11	0.375	2.2	94.0			
12	0.274	1.6	95.6			
13	0.227	1.3	96.9			
14	0.177	1.0	98.0			
15	0.137	0.8	99.0			
16	0.106	0.6	99.4			
17	0.100	0.6	100.0			

Extraction Method: Principal Component Analysis.

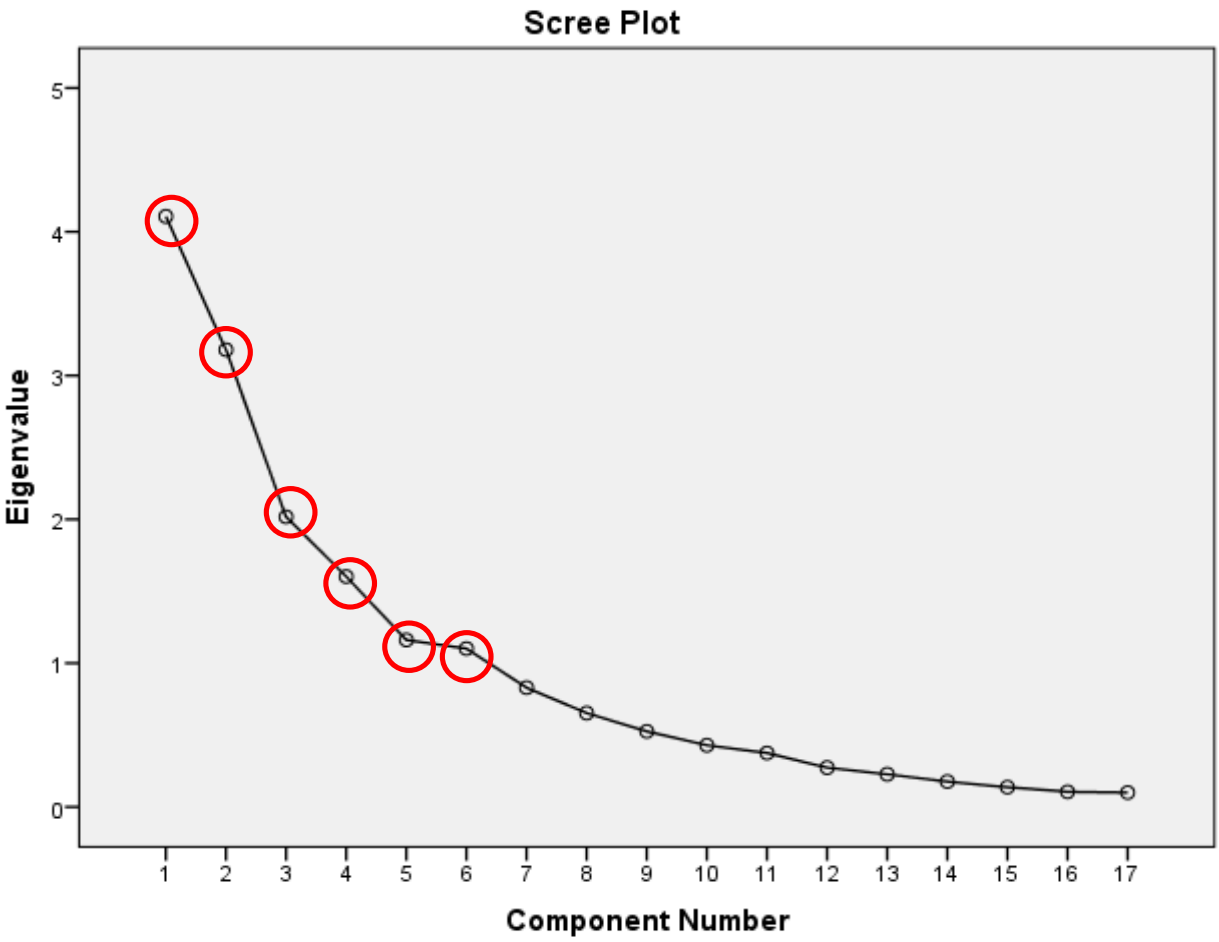


Figure 27: Scree plot: Resettled community

Table 23: Factor extraction: Host community

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative variance %	Total	% of Variance	Cumulative variance %
1	2.644	29.4	29.4	2.644	29.4	29.4
2	1.871	20.8	50.2	1.871	20.8	50.2
3	1.182	13.1	63.3	1.182	13.1	63.3
4	1.030	11.4	74.7	1.030	11.4	74.7
5	0.840	9.3	84.1			
6	0.515	5.7	89.8			
7	0.394	4.4	94.2			
8	0.302	3.4	97.5			
9	0.224	2.5	100.0			

Extraction Method: Principal Component Analysis.

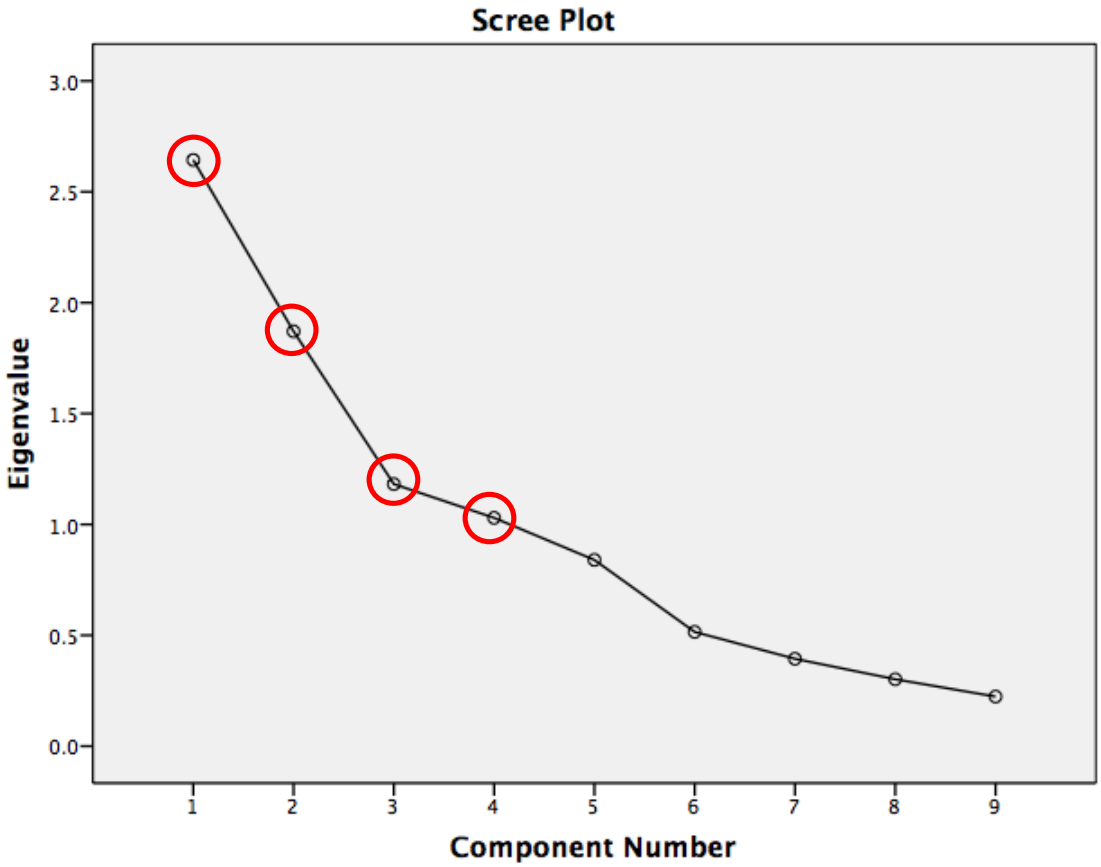


Figure 28: Scree plot: Host community

5.3.4 Factor rotation

Generally, most variables in factor extraction have high loadings on the more important factors and low loadings on all others. This makes interpretation difficult and hence a technique known as factor rotation is widely used to discriminate between variables (Field, 2007). The rotation sum of squared loading is the eigenvalue of a factor after rotation. This is used to optimise factor structure and to equalise the consequence is the relative importance for the factors. Table 24 and Table 25 shows the rotation sum of squared loading for both resettled and host community variables sequentially. Subsequently, rotated component matrix is computed to equalise the variables. In addition, the suppression of loading has been set at 0.4 to make the interpretation considerably easier. Table 26 and Table 27 describes the rotation component matrix for both resettled and host communities respectively.

SPSS offers three types of orthogonal rotation (varimax, quartimax and equamax) and two types of oblique rotation (direct oblimin and promax). Each method differs in rotating the factors. Thus, the results depend on the selected method. Field (2007) suggests varimax as a good option as it tries to load a smaller number of variables highly onto each factor

resulting in more interpretable clusters of factors. Accordingly, varimax is selected as the most appropriate method for factor rotation.

Table 24: Total variance explained: Resettled communities

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative variance %	Total	% of Variance	Cumulative variance %	Total	% of Variance	Cumulative variance %
1	4.107	24.2	24.2	4.107	24.2	24.2	3.150	18.5	18.5
2	3.179	18.7	42.9	3.179	18.7	42.9	2.508	14.7	33.3
3	2.017	11.9	54.7	2.017	11.9	54.7	2.135	12.6	45.8
4	1.602	9.4	64.1	1.602	9.4	64.1	1.842	10.8	56.7
5	1.161	6.8	71.0	1.161	6.8	71.0	1.839	10.8	67.5
6	1.101	6.5	77.5	1.101	6.5	77.5	1.692	10.0	77.5
7	0.829	4.9	82.3						
8	0.653	3.8	86.2						
9	0.526	3.1	89.3						
10	0.429	2.5	91.8						
11	0.375	2.2	94.0						
12	0.274	1.6	95.6						
13	0.227	1.3	96.9						
14	0.177	1.0	98.0						
15	0.137	0.8	99.0						
16	0.106	0.6	99.4						
17	0.100	0.6	100.0						

Extraction Method: Principal Component Analysis.

Table 25: Total variance explained: Host communities

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative variance %	Total	% of Variance	Cumulative variance %	Total	% of Variance	Cumulative variance %
1	2.644	29.4	29.4	2.644	29.4	29.4	2.546	28.3	28.3
2	1.871	20.8	50.2	1.871	20.8	50.2	1.886	21.0	49.2
3	1.182	13.1	63.3	1.182	13.1	63.3	1.213	13.5	62.7
4	1.030	11.4	74.7	1.030	11.4	74.7	1.081	12.0	74.7
5	0.840	9.3	84.1						
6	0.515	5.7	89.8						
7	0.394	4.4	94.2						
8	0.302	3.4	97.5						
9	0.224	2.5	100.0						

Extraction Method: Principal Component Analysis.

Table 26: Rotated component matrix: Resettled community

Rotated Component Matrix*

	Component					
	1	2	3	4	5	6
Climate adaptability of the house			0.610			
Comfort of the house		0.650		0.551		
Completeness and capacity				0.903		
Operational cost				0.413	-0.407	0.531
Space availability			0.703			
Availability of communal space	0.676			0.448		
Ability to maintain the house		0.770				
Ability to expand					0.848	
Access to drinking water						0.878
Adequate waste disposal	0.709					
Availability of schools	0.852					
Proximity to main road	0.814					
Availability of hospitals	0.744					0.417
Hospitality of the host		0.529	0.481			
Environmental changes		0.861				
Land use patterns					0.727	
Distance to previous location			0.798			

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

* Rotation converged in 7 iterations.

Table 27: Rotated component matrix: Host community

Rotated Component Matrix*

	Component			
	1	2	3	4
Availability of communal space	0.727	-0.456		
Access to drinking water		0.808		
Availability of electricity				0.955
Availability of schools	0.765			
Proximity to the main road	0.860			
Availability of hospitals	0.824			
Changes in land use patterns		0.857		
Relationship with new community			0.766	
Reduction in common resources			0.720	

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
* Rotation converged in 4 iterations.

5.3.5 Interpretation

In the rotated component matrix of Table 26 and Table 27, factor loadings less than 0.4 are not shown as only loadings greater than 0.4 represent substantive values for interpretative purposes. Common themes can be identified based on the content that loads onto the same factor. All the built-environment adaptability issues that load heavily on Factor 1 for the resettled community seem to relate to social infrastructure (schools, main road, hospitals, waste disposal and communal space), and hence this factor is labelled 'inadequate social infrastructure'. All questions that load heavily on Factor 2 for the resettled community seem to relate to familiarity (environmental changes, ability to maintain the house, the comfort of the house, and hospitality of the house), and hence, this factor is labelled 'unfamiliar house design'. All questions that load heavily on Factor 3 for the resettled community seem to relate to location (distance to the previous location, space availability, climate adaptability of the house, and hospitality of the host), and hence this factor is labelled 'unfamiliar location'. All questions that load heavily on Factor 4 for the resettled community seem to relate to comfort (completeness and capacity, the comfort of the house, availability of communal space, and operational cost), and hence this factor is labelled 'inadaptability of the houses'. All questions that load heavily on Factor 5 for the resettled community seem to relate to flexibility (ability to expand, land use patterns, and operational cost), and this factor is labelled 'differences in land usage'. Finally, all questions that load heavily on Factor 6 for the resettled community seem to relate to utilities (access to drinking water, operational cost, and availability of hospitals), and thus this factor is labelled 'inadequate basic amenities'.

All built-environment adaptability issues that load heavily on Factor 1 for the host community seem to relate to social infrastructure (proximity to the main road, availability of hospitals, availability of schools, and availability of communal space), and hence this factor is labelled 'inadequate social infrastructure'. All questions that load heavily on Factor 2 for the host community seem to relate to land usage (changes in land use pattern, access to drinking water, and availability of communal space), and thus this factor is labelled 'differences in land usage'. All questions that load heavily on Factor 3 for the host community seem to relate to community relations, and thus this factor is labelled 'unpleasant community relations'. Finally, questions that load heavily on Factor 4 for the

host community seem to all relate to utilities (availability of electricity), and thus this factor is labelled 'inadequate basic amenities'.

The results show that, among identified latent factors, three, namely inadequate social infrastructure, difference in land usage, and inadequate basic amenities, are common to the resettled and host communities. This demonstrates how resettlements affect the host communities and the importance of paying due consideration to them in the resettlement process. Table 28 shows the identified factors, which will be explained in the sub-sections that follow.

Table 28: Underlying factors

Common factors	**Resettled community specific factors**	**Host community specific factors**
Inadequate social infrastructure	Unfamiliar house design	Unpleasant community relations
Difference in land usage	Unfamiliar location	
Inadequate basic amenities	Inadaptability of the houses	

5.3.6 Inadequate social infrastructure

The inadequacy of social infrastructure is perceived by both resettled and host communities as an obstacle to built-environment adaptability. The level of social infrastructure is among the factors that explain the competitiveness and functionality of a socio-economic system (Popov, Katz, & Veretennikova, 2015). However, resettling people in a different location results in social disarticulation as communities lose access to their natural resources and their capacity to develop a social infrastructure (Manatunge et al., 2009). Moreover, placing the host community in a position where it has to share its resources such as roads, common buildings, schools, water bodies, forest lands, grazing lands, food supply, healthcare centres, and means of livelihood, especially fishery infrastructure, (Gunawardena & Wickramasinghe, 2009) with the new community could lead to additional complications. Woolcock and Narayan (2000) note that in countries suffering ethnic tensions, bureaucratic delays, and disaster destruction, there will be little to deter well-meaning efforts to build social infrastructure. The consequent reduction in the availability of the above-mentioned resources following resettlement has been reported in many case studies in this work as well as by others in other developing countries with similar conditions. Badri et al. (2006), based on their study conducted in post-earthquake Manjil in Iran, note that competition

for social infrastructure weakens cooperation between communities and result in a decline in the capacity of both resettled and host communities for disaster resilience and adaptability. As a solution, the International Federation of Red Cross and Red Crescent Societies (2013) propose the provision of alternative facilities, access to facilities outside the area, and enabling public/private partnerships which will provide alternate facilities as part of resettlement programmes.

5.3.7 Difference in land usage

Difference in land usage is identified as an underlying issue that affects the built environment adaptability of both resettled and host communities. Generally, resettlement introduces new land for habitation, production, and other uses, and changes the lifestyle of communities. Subsequently, these resettlement lands have an unfamiliar meaning to the people who are reluctant to abandon their lifestyle. The results of the present study show that it also acts as an obstacle to adaptation to the new environment for both guest and host communities. Keraminiyage and Piyatadsananon (2013) note that large-scale resettlements often become crowded towns in the long-term since they would have all essential facilities within their respective boundaries. If both communities led a rural and environment-based lifestyle before resettlement, this change could affect them negatively. Case study results in the present work (see Section 7.2) also reveal that the lands used for resettlements are mostly bare land or unattended woods before resettlement, which the host communities freely used for drain water disposal, firewood collection, picking herbs, and as walkways. Resettlement changes these patterns without offering alternatives, which is seen as an unfavourable post-resettlement condition by the host community. Further, Karunasena and Rameezdeen (2010), based on their study in Sri Lanka, observe that the land selection for resettlement can also have a role in satisfactory land-use, since in some cases, the government has allocated marshy and unfertile land for resettlement for want of suitable land. Thus, it seems that the existing land-use and anticipated land-use conditions need to be considered prior land selection for resettlement.

5.3.8 Inadequate basic amenities

Inadequacy of basic amenities has been identified in this study as a latent factor negatively affecting the built-environment adaptability of both resettled and host communities. Figure 4 shows that the provision of drinking water, electricity, gas, and telephone facilities had in fact improved following resettlement. However, a plausible reason for the communities to rate them low is that the capability of the communities to pay to sustain these amenities did not improve in proportion. Further, the provision of the amenities is not to perfection, and sections of the resettled and host communities are still living without several of the essential amenities. Similar issues are recorded by Jordan et al. (2015) in the

Nagapattinam District of India, where more than 50% of the post-tsunami resettled community still lacks access to safe drinking water. Further, Gunawardena and Wickramasinghe (2009) point to delays in providing access to drinking water in Sri Lankan post-tsunami settlements, since the tsunami denied access to groundwater by salinating the sources. Kumar (2015) observes that the absence or the inadequacy of basic household amenities reflects widespread poverty and poor standard of living of the victims of disaster. Thus, provision of amenities is among matters that if poorly managed will affect both displaced and host communities.

5.3.9 Unfamiliar house design

Resettled communities consider unfamiliar house design as a hindrance to adapting to a new built-environment. Generally, large-scale resettlement houses repeatedly use a standard house design in the interest effective management of time and resources. However, beneficiaries are often critical of such houses for their inappropriate design, materials and technology (Ahmed, 2011; Sanderson et al., 2012). Findings of case studies in the present work (see Section 7.2) endorse position, with many respondents finding the design of the houses did not suit their rural lifestyle. In particular, the kitchen was designed for cooking with a gas-cooker, whereas the people have been used to firewood. Further, the community was unaccustomed to attached toilets, and there were no storerooms for the fishing equipment. As pointed out in Section 2.2.2.1 in literature review, similar issues were faced in several other developing countries (Ahmed, 2011; Jordan et al., 2015; Sanderson et al., 2012). This indicates that the local needs tend to be poorly understood by the donor agencies and that community participation was inadequate to communicate the needs of the beneficiaries.

5.3.10 Unfamiliar location

Unfamiliar location was found to be another underlying adaptability issue of the resettled communities. Andrew et al. (2013) argue that location plays a major role in accepting a new built environment. A location is often associated with social attachment, livelihood and culture of a community, and hence a change in it can affect communities negatively. Section 2.2.2.3 of the literature survey offers evidence of how change of location has affected communities in developing countries under conditions similar to those in Sri Lanka. For example, a study by Cao et al. (2012) in China demonstrates a significant drop in living standard of people originally from flat land when they were resettled in an elevated location. Moreover, cultural, regional and ethnic differences between the host and displaced communities also affect the pattern of interaction with the built environment (International Federation of Red Cross and Red Crescent Societies, 2013). This is why traditional migration theories often relate the attraction to migration with the location (Lee, 1966;

Vanderkamp, 1977). Therefore, suitability of location has to be taken into account in land selection to ensure better adaptability of the settlers.

5.3.11 Inadaptability of the houses

Resettled communities recognise inadaptability of the houses as a serious obstacle to adapting to a new built-environment. It was already pointed out in Section 4.3.9 that unfamiliar house designs hamper adaptability. It is worth noting that unfamiliar house design refers to the culturally inappropriate design for the users, while inadaptability of the houses refers to the inflexibility of the houses for customising according to the needs of the user. Resettlement schemes often do not allow flexibility to expand floor area as necessary (Thiruppugazh, 2016). Further, the beneficiaries also face many difficulties including financial and legal issues in expanding and adapting the houses to meet their requirements (Seneviratne et al., 2016). Section 2.2.2.1 of the literature review offers evidence in support of this issues based on several case studies. For example, Jigyasu and Upadhyay (2016) have shown that all the examined donor-provided houses after the 1993 earthquake in Marathwada in India, have undergone renovation, repair, or extension. This shows that the community could not adapt houses as provided and that the houses did not support long-term adaptability. This makes adaptability of the houses as a factor to be considered seriously in the planning stages of housing construction.

5.3.12 Unpleasant community relations

Unpleasant community relations constitute a latent issue of host communities that influences their inadaptability to the built-environment. Magis (2010) notes that considerations of compatibility between the host and displaced communities is often overlooked by the relevant authorities owing to time limitations, drawbacks in the policies, and financial unpreparedness. The overarching reasons for an unpleasantness in relationship between the host and displaced communities are: quarrels over common resources, growth of an informal economy, lack of improvement in public services, and language and cultural barriers. Oliver-Smith (1991) suggests that success of a resettlement will be enhanced if the resettlement is approached as socio-cultural as well as a material problem in which the host and affected communities participate in planning and implementation. Similarly, the Belgian Red Cross (2009) states that both host and affected communities should be consulted before implementation of the relocation programme. However, the host community as a category has received much less attention than the new community in the resettlement process. This discrimination somewhat restrains the willingness of the host community to welcome the new community (Brun, 2010). The tendency for institutions to primarily assign greater responsibility towards the

resettled community hurts the attitude of the host community towards new arrivals and contributes to reluctance in accepting the new community.

5.4 Summary and link

An analysis of questionnaire survey conducted to achieve one of the objectives, namely the evaluation of the existing built-environment related challenges and obstacles faced by the resettled and host communities was presented in this chapter. A descriptive analysis was followed by a factor analysis to evaluate the latent factors from the issues identified in the literature. The results show that, among identified latent factors, three, namely inadequate social infrastructure, difference in land usage, and inadequate basic amenities, are common to the resettled and host communities. Unfamiliar house design, unfamiliar location, and inadaptability of the houses are the identified latent factors specific to resettled communities. Then, unpleasant community relations are the latent factors specific to host communities. The findings will be used in the chapters that follow to analyse the top-down procedures and in case study analysis.

Chapter 6 : The Bottom-up Perspectives on Resettlement: Case Study Analysis

Chapter 5 explained the data analysis of questionnaire survey. This chapter contains the analysis of case studies exploring the built-environment related expectations and needs of both displaced and the host communities within the context of resettlement in three selected districts in Sri Lanka (see Figure 29). Further, it also addresses the attracting and repelling factors of the built-environment, and resettlement procedures from the communities' perspective. The chapter firstly describes the procedures adopted for the case study and background of the cases and follows it with the analysis of the cases individually.

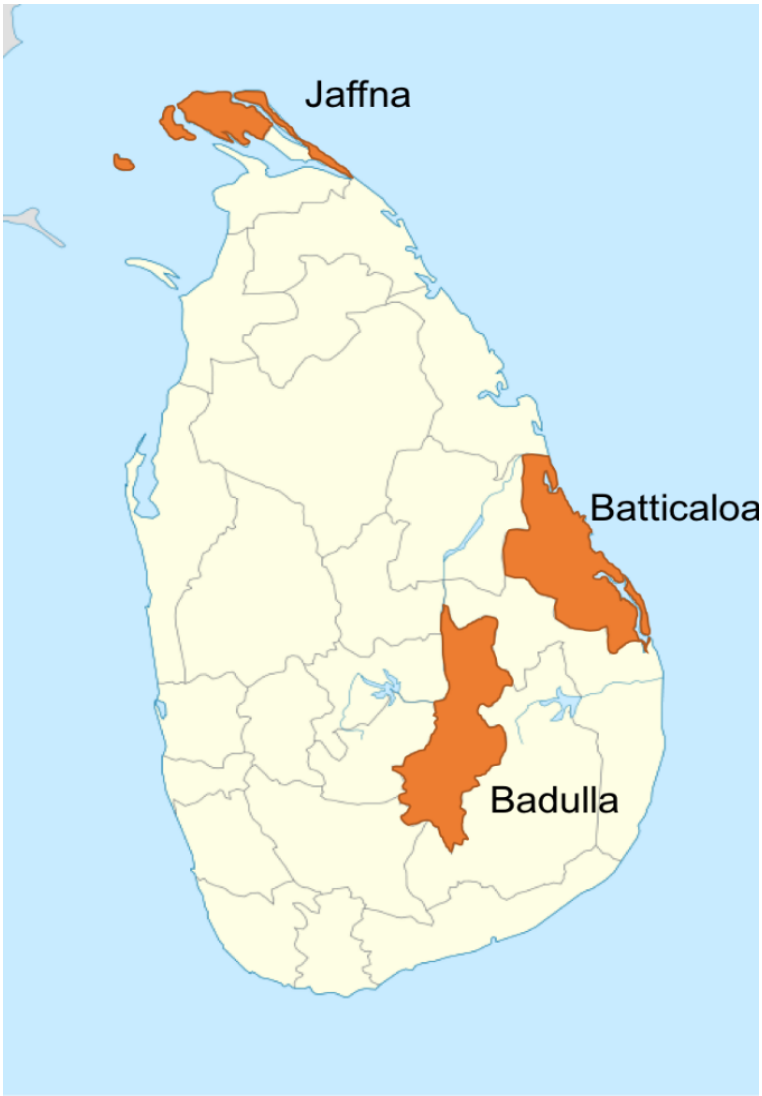


Figure 29: Study area

6.1 Background and procedures adopted for case study analysis

Disaster-induced resettlement is common in Sri Lanka, and has been observed across the country. As stated in Section 3.5.1 on methodology, nine case studies were conducted in Sri Lanka. The three districts selected as study areas ensure that all categories of DIDR are covered while the number of cases and data remain manageable. They are Jaffna, a district highly affected by conflict; Batticaloa, one of the districts most affected by tsunami; and Badulla one of the districts highly prone to landslides. The districts belong to three different provinces, namely the Northern, Eastern and Uva Provinces. Disaster-induced resettlement schemes were selected for case study in each study area. In keeping with the concurrent nested mixed method, simultaneous qualitative and quantitative data collection was implemented between June and August 2016 and the quantitative data analysis is presented in Chapter 5. Semi-structured interview was used as the principal data collection method in the case studies reported in the present chapter. Of the nine cases, five are in areas where communities have been fully resettled, and four in areas where communities await resettlement in order to embrace different perspectives on resettlement. Each case is described in fair detail in the sections that follow. Seventy semi-structured interviews were conducted among both displaced and host communities. The number of interviews conducted and snapshot of the cases are presented in Table 29.

According to Yin (2014), case study analysis is one of the latest developed aspects of doing case studies and there is no established strategy for analysis. The analysis, instead, depends much on the researcher's style of empirical thinking and interpretation. Thus, general qualitative approaches for analysing interviews are considered for the work reported in this chapter. Study of Braun and Clarke (2006) shows that thematic analysis is the basis for all incredibly diverse variety of qualitative approaches for analysis. There are multiple ways of doing thematic analysis across disciplines. For this study, template analysis, a style of thematic analysis, is employed considering the epistemological position of the research (see Section 3.7.2). Template analysis emphasises hierarchical coding by balancing a high degree of structure (Brooks et al., 2015). Accordingly, preliminary coding was organised into themes using NVivo software and structured into a template. The initial template was further modified and applied to the whole set of data. As pointed out by Yin (2014), a typical multiple case study report comprises sections on individual case studies as well as one on the cross-case study. This chapter reports case study results and the following chapter reports the cross-case analysis. Besides, this case study analysis uses theoretical propositions to lead the analysis, which is one of the four general strategies for analysing case study data (Yin, 2014).

Table 29: Number of interviews

District	Post-disaster resettlement	Type of disaster	Phase of resettlement	Availability of host community	Voluntariness of the resettlement	Number of interviews
Batticaloa	1. Kallady	Tsunami	Resettled: more than 10 years	Yes	Involuntary	10
	2. Thiraimadu	Tsunami	Resettled: more than 10 years	No	Involuntary	13
	3. Kaluwanchikudy	Tsunami	Resettled: more than 10 years	Yes	Involuntary	15
Badulla	4. Arnhall	Landslide	Expecting resettlement	N/A	Involuntary	06
	5. Queenstown	Landslide	Expecting resettlement	N/A	Involuntary	05
	6. Makaldeniya	Landslide	Houses allocated	No	Involuntary	07
	7. Meeriyabedda	Landslide	Expecting resettlement	N/A	Involuntary	04
	8. Newburgh, Ella	Landslide	Houses allocated	No	Involuntary	07
Jaffna	9. New moor street	Civil war	Resettled an year before	Yes	Voluntary	06
Total						**73**

6.2 Case 1: Kallady: Annai velankanni

The village of Kallady is located in the Manmunai North Divisional Secretariat (DS) division, Batticaloa District, Sri Lanka. The village suffered severe devastation by the 2004 Indian Ocean tsunami resulting in heavy loss of life and property. The sea borders this area on the east and Batticaloa lagoon on the west. Being a coastal village, the buffer zone policy was applied to it after the tsunami, with no new structures permitted within a 100 to 200 m strip of the coast. The government resettled people who lost their lands and houses inland and within the same village with assistance from several NGOs.

In the settlement "Annai Velankanni", each settler was given 15 perches (0.0379 ha) of land with a house with electricity and drinking water facilities. A preschool built along with the houses is not functional, as the settlers lived in the vicinity of their former lands and there was no change in their livelihood or in that of the host community. This settlement is relatively old with people living there for more than ten years. The principal occupations of the settler community are fishing and casual labour. According to Batticaloa Disaster Risk Reduction Plan (UN-HABITAT, 2013), the area is prone to tsunami, cyclone, and flood.

Ten members of the "Annai Velankanni" resettled community expressed their views on factors that attracted them to the built-environment of the resettlement and those that repelled them, the resettlement process that they went through, and their expectations and needs in the resettlement programme. Respondents are referred as R1 to R10 in the text as their identities have been anonymised.

6.2.1 Favourable conditions

Human beings can adapt to a built-environments if certain basic conditions are fulfilled (Jigyasu & Upadhyay, 2016). Any favourable condition besides those basic conditions in the new built-environment will attract people to remain in the location. Interviewees recognised such favourable conditions in "Annai Velankanni" settlement. Figure 30 shows the coding structure of the favourable conditions, and Figure 31 shows the cognitive mapping of those factors including their sub factors.

Name	Sources	Refere...
Favourable conditions	9	61
Availability of physical and social infrastructure	9	22
Possess a land with a permanent house	7	13
Improvements in the location	6	10
Better houses	5	9
Prefer resettlement closer to previous location	2	7

Figure 30: Coding structure for favourable conditions in Annai Velankanni

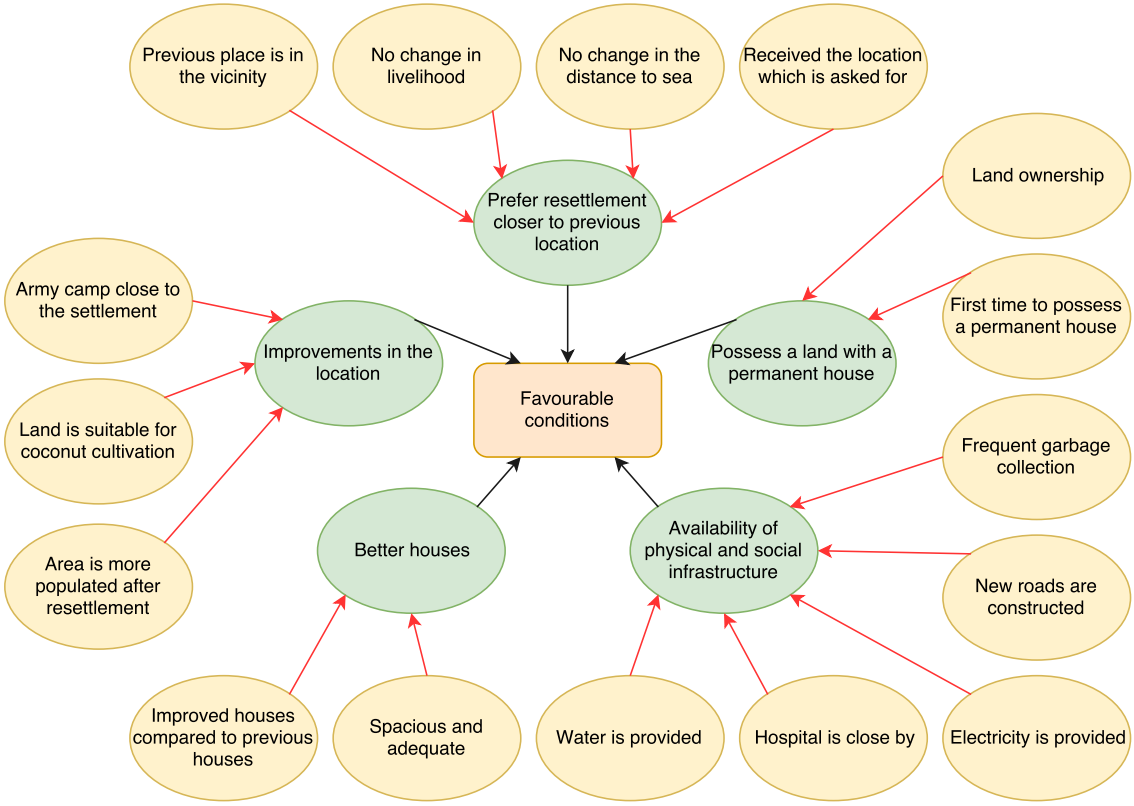


Figure 31: Cognitive mapping for favourable conditions in Annai Velankanni

One of the most stated favourable conditions for the interviewees is possession of a land with a permanent house. In R7's words *"we did not own a house previously. We were living in a rented house before the tsunami. It feels good to own a land with a house."* Agreeing with this statement, R4 stated that, *"We lived in a small hut along the coast. It was just an enclosed space with a roof. A cardboard walled the rear of the house. Compared to that, this house is much better."* Supporting this, R3 and R5 also expressed similar thoughts. Interview responses revealed that the majority of the settlers who live in this settlement are once illegal squatters who used to live on the coast of Kalladi, in small semi-permanent houses. Therefore, they consider having a land with a permanent house as a major asset that they ever possessed in their lives. R5 endorsed this by stating *"the previous land was not mine. I was there unlawfully. Now this place belongs to me. I maintain the land and the house with the sense of ownership, in a way I like"*. Although most of them have not yet received their deeds of ownership, they feel the sense of ownership. Baxter, Aurisicchio, and Childs (2015) explain this as psychological ownership, which occurs when the target fulfils the motives of ownership. These motives of ownership can vary based on the intention, interaction, and experience of the user (Baxter et al., 2015). Therefore, it is fair to assume that the resettlement has fulfilled their expectations up to a certain extent.

The respondents agreed that the location has generally improved in terms of socio-economic standards after it is populated with settlers. The community attributed it to the improvements in access to physical and social infrastructure. Among all infrastructure, respondents gave priority to the improvements in electricity, water, hospitals, and roads. In particular, availability of electricity was expressed as a favourable condition by eight (08) respondents out of 10. For example, R4 stated, *"We did not have electricity connection in our former location. Now we are provided with electricity"*. This statement shows that the favourable conditions are expressed comparatively to their past obstacles. Besides, respondents mentioned regular garbage collection as one of the decisive factors. Further, it is interesting to note that, people prefer to live in populated areas. R2 stated, *"At the beginning, we weren't sure whether we should move here or not. Later, once this area is populated we decided to move here"*. According to R2 and R4, an army camp closer to the settlement also attracted people to the location as it made them feel safe, since settlement was initiated during the civil war.

Settlers reflected satisfaction regarding the given house. R3 expressed that *"the house is spacious and adequate for my family compared to my previous house".* R1, R2, R4, and R6 also voiced similar statements. However, the space adequacy is a relative concept and largely depends on the needs of the user. Interview results further reveal that the respondents preferred a house built entirely by some external institution than one done themselves. R2 stated, *"It would be good if any organisation helps us in completing this house. The amount of money which was provided was not adequate".* Because these people are financially unsound and they were reluctant to spend their own money if the cost of building exceeds the compensation. Another attracting factor of this settlement is its location. Respondents expressed contentment with the location offered following their joint plea. R3 stated, *"The land which was offered to us at the beginning was located in a remote place. So, we requested this land through our member of parliament."* The settlement was near the community's previous location. Therefore, the host community, distance to the workplace, livelihood, distance to the sea, and other location related factors did not change. Further, the given land is suitable for coconut plantation, which provides an alternative livelihood to the community.

6.2.2 Unfavourable conditions

In contrast to favourable conditions, every built-environment retains characteristics which repel people (Lee, 1966). Human beings can overcome some of them, but not all. Respondents reflected on characteristics that repel them from the resettlement. These unfavourable conditions are categorised into two groups. They are built-environment related factors and other socio-economic factors. As the focus of this study is built-

environment, only most relevant other socio-economic factors are listed. Figure 32 shows the coding structure of the unfavourable conditions. Further, Figure 33 shows the cognitive mapping of those factors including their sub-factors.

Name	Sources	Refere...
Unfavourable conditions	9	68
Built-environment related factors	9	62
Insufficient infrastructure	8	17
No legal ownership	8	10
Incomplete houses	6	16
Inadaptability of the houses to climate changes	5	6
Flood prone location	3	7
Defects in the houses	2	4
Inability to maintain the houses	2	2
Other socio-economic factors	2	6
Disruption in social network	2	3
Decrease in job opportunities	1	3

Figure 32: Coding structure for unfavourable conditions in Annai Velankanni

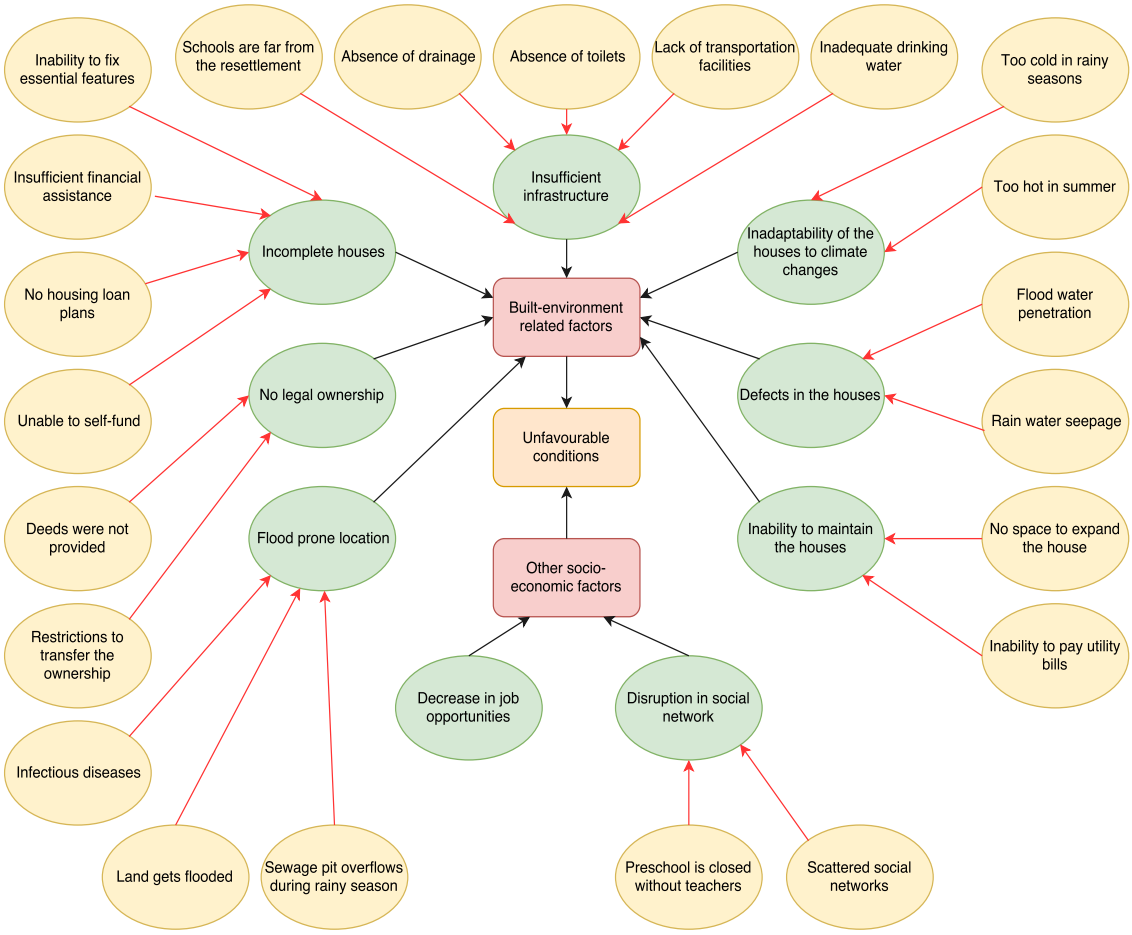


Figure 33: Cognitive mapping for unfavourable conditions in Annai Velankanni

A common concern expressed by the respondents about the resettlement is its vulnerability to seasonal changes. According to Batticaloa Disaster Risk Reduction Plan (UN-HABITAT,

2013), Kalladi village is prone to floods, and "Annai Velankanni" resettlement is no exception. Part of the resettlement is in low-level land, and is flooded during rainy seasons. In R4's words, *"Flood raises to knee level during the rainy season. This happens almost every year. It is a problem in this location"*. R6 and R8 also expressed similar views. Besides, the respondents also pointed out that the floodwater penetrates into the houses owing to inadequate damp-proofing. R4 and R6 saw this as a reason for the spread of infectious diseases in the settlement during the rainy season. The irony seems that the people to escape a disaster have been resettled in another disaster-prone area. This shows a lack of disaster resilience awareness in the land selection process.

Lack of climate adaptability of the houses was among prioritised as another repelling factors. Respondents complained that it is too hot in summer inside the house. Among reasons for this condition were the absence of sun-shades in the house design, the use of inappropriate materials. R2 endorsed this, stating, *"Recently, we built a sunshade at the front of the house as it was sweltering inside the house without it"*. The respondents also noted that all trees and vegetation were cleared at the start of resettlement to allow access for large-scale construction equipment. However, no attempts was made to plant trees in an organised manner. This aggravated that impact of extremely warm weather at the location. Besides, the community found it too cold during the rainy season as water penetrates into the house owing to lack of waterproofing. For example, R4 stated, "W*ater penetrates during the rainy seasons. Therefore, we feel freezing cold inside the house".* Besides flood water penetration, rainwater seepage too is identified as a problem by the community, which is associated with poor quality of construction. Although there were temporary measures to address these issues, the people felt that they are inadequate during heavy rains.

The recipients of the core houses built by the NGOs were expected to complete them to suit their needs. While respondents admitted that they received financial assistance to complete the house, half the recipients could not complete their houses mainly for lack of adequate financial support. R2 said, *"The government handed us 100,000 rupees to complete the house. We cannot do much with that money"*. R1 and R5 also expressed thoughts endorsing R2's statement. Besides, no housing loan opportunities were available to the community, and most of the recipients were underprivileged and could not find money on their own to invest. It is important to note that the houses were not provided with toilets. Further, R1 and R7 said that they use their neighbour's toilets as they could not afford to build one. Such incompleteness lead to further problems in installing overhead tanks and providing other features essential to comfortable living. The respondents also

stated their incapacity to pay the utility bills and inability to maintain the houses at an acceptable standard.

In addition to shortcomings of houses, the respondents also drew attention to unfavourable aspects of social and physical infrastructure. As explained in Section 6.2.1, respondents expressed satisfaction with the availability of water, electricity, hospitals and roads. They complained, however, about the lack of certain other essential infrastructure. Notably, most of the respondents drew attention to the absence of proper drainage system that aggravated flooding. R8 said, *"Some land plots were elevated for housing construction. Therefore, floodwater does not run off by itself, though the location is close to the sea. Hence, a proper drainage system is necessary".* Likewise, respondents also pointed out that sewage system was also inadequate, and overflowed during the rainy season. This made the groundwater unfit for consumption, as a result of which the community suffers inadequacy of drinking water.

Poor public transport facilities comprise another repelling factor for this settlement. Though roads were provided, public transport offered for the area is inadequate, and R4 complained, *"Children of the community have to walk a long way to school as they attend schools which lie outside the settlement"*. A primary school built within the settlement ceased functioning owing to shortage of teachers. The respondents also expressed dissatisfaction with ownership conditions. Most of the recipients had not received the deeds of ownership yet. Further, ownership was subject to conditions which prevent them from transferring the property or rent the houses to a third party. In R5's words, *"We cannot sell or transfer this property to a third party. But, with adequate proof, we can transfer it to our children"*. Reasons for the delay in the issue of deeds are given in the Section 4.4.1 from the authorities' perspective. However, the community finds it undesirable. Over and above built-environment related factors, the respondents added disruption in social networks and a decline in job opportunities as other repelling factors of the settlement.

6.2.3 Resettlement procedure

Current procedures for planning and implementing resettlements were explained in Chapter 5 from a top-down perspective. The resettlement procedures in "Annai velankanni" settlement are described here from the perspective of the recipients.

The Buffer Zone policy enforced along affected areas including the Kalladi coast, following the tsunami, restrained construction and reconstruction of permanent structures. Consequently, land was allocated for resettlement of people from the affected area. Victims of the Buffer Zone policy were asked to lodge a land request through the "Grama Niladari" (a public official appointed by the government to carry out administrative duties of subunits

of the Divisional Secretariat). Respondents said that selected beneficiaries had participated in a meeting on land allocation with the government representatives. According to R3 and R4, the beneficiaries rejected the proposed land owing to the remoteness of the location, and requested land close to where they live now. The request was granted, and the respondents expressed satisfaction about receiving land as requested. Further, the recipients did not have to give-up their old lands in exchange for the new. R3 stated, *"The government has asked us to maintain our former lands. However, we cannot erect any permanent structure".* Based on this statement and similar views expressed by R4, it seems that the authorities have required the recipients to maintain their former lands by planting trees since the buffer zone cannot be left barren.

The government offered money to the beneficiaries to build the houses. Subsequently, some NGOs toped up the offered sums using their funds and built the core houses for the people. However, as mentioned the Section 6.2.2, people preferred an external party building the entire house for them rather than letting them build on their own, because they found the money offered by the government to be insufficient to complete the houses and they could not afford the money to meet the additional cost. People were also of the view that corruption was a reason for inadequate fund allocation. For example, R9 said, *"We learned that fund was allocated for road construction. But we wonder why it has not been utilised"*. Besides, during the period of construction, not everyone received a temporary shelter. R3 endorsed this: *"My family did not get a temporary shelter. We rented a house during the period of construction".* The interviews further revealed that the people had not been consulted about house designs and other socio-economic aspects of the resettlement. The beneficiaries were given permit documents to attest their occupancy of the houses. However, seven of the ten interviewees complained that the document did not affirm their ownership.

6.2.4 Expectations and needs

Understanding the expectations and needs that the beneficiaries have of the resettlements is essential to satisfy them, and beneficiary satisfaction is the key to sustain their stay in the resettlement. In conventional economic terms, the satisfaction of a built environment is measured based on the customers' willingness to pay. According to Day (2013), in the case of resettlements, it can be measured based on ensuring no decay in community's welfare. Based on this argument, attempt is made this section to explain how the community perceives their welfare in the context of the built-environment. Figure 34 shows the coding structure of the beneficiaries' expectations and needs, and Figure 35 shows the cognitive mapping of those factors and their sub-factors.

Name	Sources	Refere...
Expectations and requirements	8	33
Complete houses	5	12
Ownership of the lands and houses	5	7
Sufficient facilities	3	3
Access to the nearest town	2	6
Transparent beneficiary selection	2	3
Job opportunities	1	1
Location closer to previous location	1	1

Figure 34: Coding structure for expectations and needs of Annai Velankanni settlers

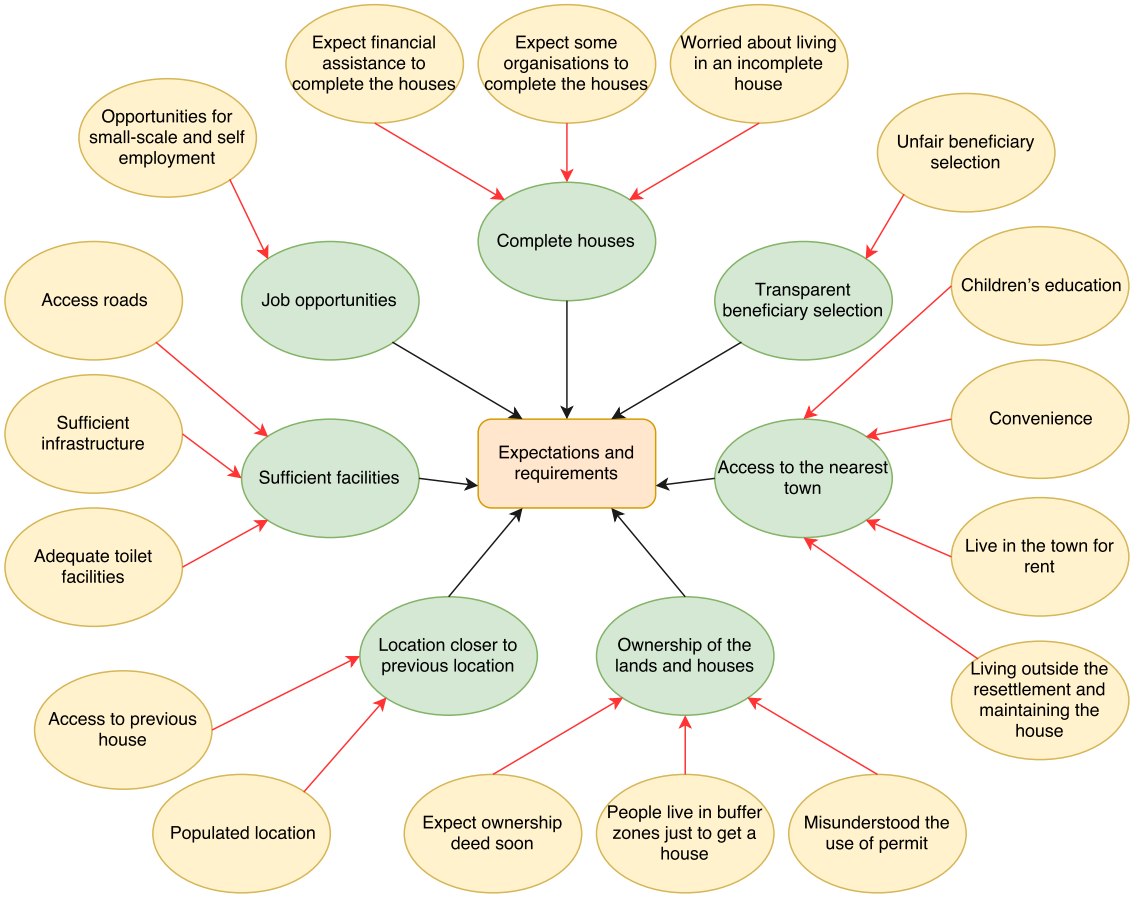


Figure 35: Cognitive mapping of expectations and needs of Annai Velankanni settlers

Occasionally, despite the devastation, disasters create opportunities for the people. Results of the study show that a permanent house is projected as the foremost need of a disaster-affected community for several reasons. Those resettled in the "Annai Velankanni" settlement mostly comprised an underprivileged population from the Kalladi coast. Thus, they saw this as an opportunity to get a permanent house which they could not have afforded otherwise. This was affirmed by R4 who said, "*Some people who are not affected*

by the tsunami moved to the buffer zones and temporary shelters just to get a house, because of the housing schemes were offered only to the people who lived in buffer zones". The researcher further observed that some people remained buffer zones in the hope that the government will offer them houses. Evidently, the key concern regarding the "Annai Velankanni" resettlement was the inadequacy of the financial assistance to complete the houses. As explained in the Section 6.2.2, incomplete houses give rise to several related issues that repel people form the resettlement. Accordingly, R2, R4, R6, and R8 expressed expectations of more financial aid in the forms of compensations and housing loans. Otherwise, they strongly urged that rather than receiving money they would have an NGO or any other organisation complete the houses for them. For example, R9 said, *"I too am affected by the tsunami too. Many people had housing schemes that offered completed houses. I too am asking for something like that".* R9 added, *"Some families received more than two houses whereas I did not get any. We do not know how they select beneficiaries"*. This and a similar statement by R2 indicate that the people suspected unfairness in the selection procedure and wanted a transparent beneficiary selection procedure.

One of the stated primary needs of the beneficiaries is access to the nearest town. Some of the respondents said that they live in rented accommodation in the town and retain the resettlement house for future economic gain. R1, for example, said, *"I live in a rented house in the town. I come here on weekends to clean the house and the land"*. Reasons for living in the town, as indicated by the respondents, are children's education, livelihood, convenience, and unfavourable conditions in the resettlement including the lack of toilet facilities. R1 and R9 noted that although the town is not very far from the settlement, inadequacy of transport made them leave the resettlement.

Receiving ownership of the lands and houses early was another expectation of the respondents. Beneficiaries had not been issued with deeds of ownership up to the date of data collection (06.06.2016). Five out of the ten respondents felt that it restricted their uninterrupted possession and enjoyment of the property. However, during the data collection, it was discovered that some of the earlier beneficiaries had already sold or rented their houses without legal approval. This was partly because people misunderstood the purpose and use of the permit. R3, confirming this, said, *"We can transfer the properties based on the given permit document. We have the right to it"*. However, the permit granted attesting their occupation of the houses could only be used to pay the municipal taxes and to obtain utility supply. Contrary to this, beneficiaries used the permit as a legal document for the transfer. In some cases, the houses were sold for less than actual cost as beneficiaries transferred them without legal ownership. R8 observed that, *"These illegal transactions devalued the market prices of the properties".* The responses

show that demand for houses increased subsequently, motivating beneficiaries to sell. The researcher also identified beneficiaries who divided their lands among relatives. This condition shows that if an economic good, in this case, a permanent house, given free would tempt people to make a financial benefit out of it rather than put it to use. The house so given was considered as a gift by the beneficiaries who did not own a house previously, and others did not give up their ownership of their previous residence.

As discussed earlier in Section 6.2.3, a location closer to the recipients' former location is a need which was already fulfilled by the officials. People opposed an earlier location proposed by the government because of its remoteness. This shows that people expect a populated location rather than a remote location. Besides the expectations and needs discussed above, adequate toilet facilities, sufficient infrastructure, and opportunities for small-scale and self-employment were also referred to by the respondents. Overall, the respondents were of the view that not all their needs and expectations of the resettlement were fulfilled.

6.3 Case 2: Thiraimadu: Swiss village

The Thiraimadu tsunami housing scheme is located in Manmunai North DS division in the outskirts of Batticaloa city. Manmunai North is one of the smallest and densely populated DS divisions. This division covering a 16 km stretch along the coast was severely affected by the 2004 Indian Ocean tsunami. 3,890 houses were destroyed fully and 1,197 houses partially (The Reconstruction and Development Agency, 2006). Besides, the enforcement of the buffer zone policy and a rise in prices of construction materials aggravated the need for houses at the time. The government, to cater to this demand, acquired and cleared a significant amount of land in Thiraimadu. The acquired land was zoned as Zones A to K and different designs of houses were built by various NGOs in each zone. One thousand affected families from four villages of the division were resettled in this area.

The data was collected in the resettlement zone known as "Swiss village". Every settler was given 15 perches (0.0379 ha) of land with a house. Electricity and drinking water facilities are provided. Further, a school, a health centre, a church, community hall, and internal roads were also constructed within the settlement. The principal occupations of the community which is residing in this resettlement are fishing, farming, and casual labour. According to Batticaloa disaster risk reduction plan (UN-HABITAT, 2013), similar to Kallady, this area is also prone to tsunami, cyclone, and flood. Aftermath tsunami, Thiraimadu area is mainly populated by resettlement, and it has gained immense importance for development activities. Is it interesting to note that there is no involvement

of host community in this resettlement as Thiraimadu is a whole new development and it was a remote woodland before the tsunami.

Thirteen members of "Swiss village" resettled community expressed their views on factors that attract them to a built-environment, factors that repel them from a built-environment, resettlement procedures that they went through, and their expectations and needs in the resettlement programme. Respondents are referred as R11 to R23 within the text as their identities are anonymised.

6.3.1 Favourable conditions

Figure 36 shows the favourable conditions of the resettlement that attracts them to stay; and Figure 37 shows the cognitive mapping of those factors including their sub-factors.

Name	Sources	Refere...
Favourable conditions	12	86
Availability of physical infrastructure	12	26
Developments in the location	11	17
Availability of social infrastructure	10	18
Improvements in living standard	8	17
Adequate land size	4	4
Sense of safety	4	4

Figure 36: Coding structure for favourable conditions in Swiss Village

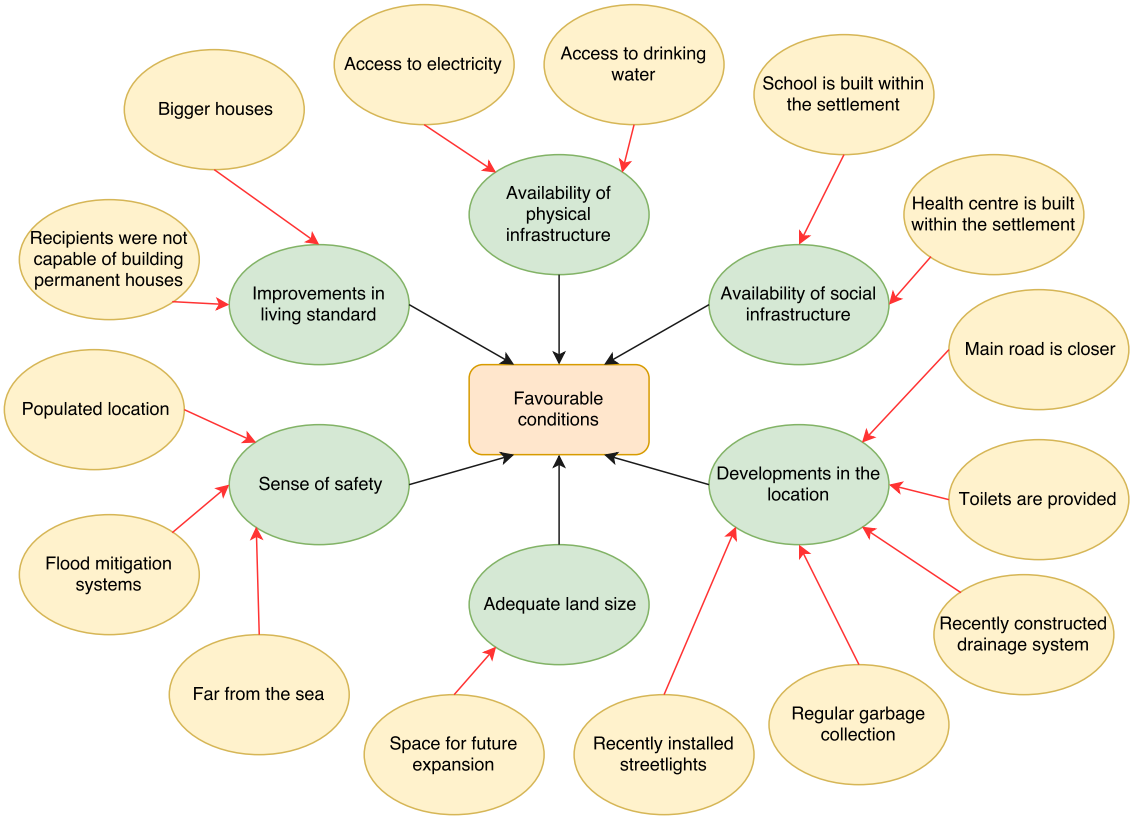


Figure 37: Cognitive mapping for favourable conditions in Swiss Village

The community lives in "Swiss village" comprises people from different villages and different socio-economic backgrounds. Mostly, what attracted them to the resettlement was relative and varied with individuals. However, all the respondents mentioned the availability of physical infrastructure as a favourable condition. Particularly, the availability of drinking water and electricity was consistently indicated by eleven out of thirteen respondents. Secondly, the respondents gave importance to the social infrastructure. Thiraimadu resettlement is a newly developed area for tsunami victims without a pre-developed social infrastructure. Hence, a school and a health centre were planned and built within the settlement to cater to the needs of the new community. Respondents appreciated and referred to it as a favourable condition. In R20's words, *"We have a school and a hospital within the settlement, which eliminates many problems"*. Though R11, R12, R13, and R22 expressed dissatisfaction with the school's performance, all respondents agreed that the health centre functioned well.

Though respondents included people from different socio-economic backgrounds, they mainly agreed that their living standard has generally improved compared to that before the tsunami. Seven out of thirteen respondents said that the given houses are bigger than what they had before. Also, R21 stated, *"We were not capable of building a permanent house by ourselves, which is one of the favourable conditions to stay in the resettlement"*. Further, they were grateful to the NGO which built the houses completely and inclusive of all the essential facilities, while houses in other zones lacked in some essential features and amenities. R16 endorsed this: *"This is the only NGO which built houses with all the features and facilities. We are lucky to get one of these houses"*. Moreover, "Thiraimadu" as a new development drew the attention of the authorities for development activities in several ways to become more habitable. For example, a drainage system was constructed within the settlement recently as the location is prone to flooding. R12 stated, *"This has improved our wellbeing by eliminating the seasonal flooding issue"*. Besides, the recent instalment of street lights, adequacy of toilet facility, proximity to the main road, and regular garbage collection were also frequently referred to by the respondents.

Another favourable condition expressed by the respondents is land size. Each recipient was given a 15 perches (0.03794 ha) land plot, which according to R13, R17, R19, and R20 is adequately large for future expansion of the house and other essential constructions such as a groundwater well or an additional kitchen or a toilet. Besides, the new location gave a feeling of safety from possible tsunami and flood. In addition, respondents further noted that the area has now populated with people, which is a factor that reinforces the sense of security and offers opportunity and potential for future development.

6.3.2 Unfavourable conditions

Unfavourable conditions as listed by the respondents are classified into two categories: namely built-environment related factors and other socio-economic factors. Figure 38 shows the coding structure of the unfavourable conditions and Figure 39 shows the cognitive mapping of those factors and sub-factors.

Name	Sources	Refere...
Unfavourable conditions	12	64
Built-environment related factors	12	52
Inadaptability to seasonal changes	9	13
Delays in issuing ownership deeds	8	8
Defects in the house	7	12
Inappropriate house design	7	14
Inadequate transportation facilities	3	3
Inadequate maintenance of common amenities	1	2
Other socio-economic factors	7	12
Disruptions to livelihood	5	7
Poor performance of the school	4	4
Increased living expenses	1	1

Figure 38: Coding structure of unfavourable conditions in Swiss village

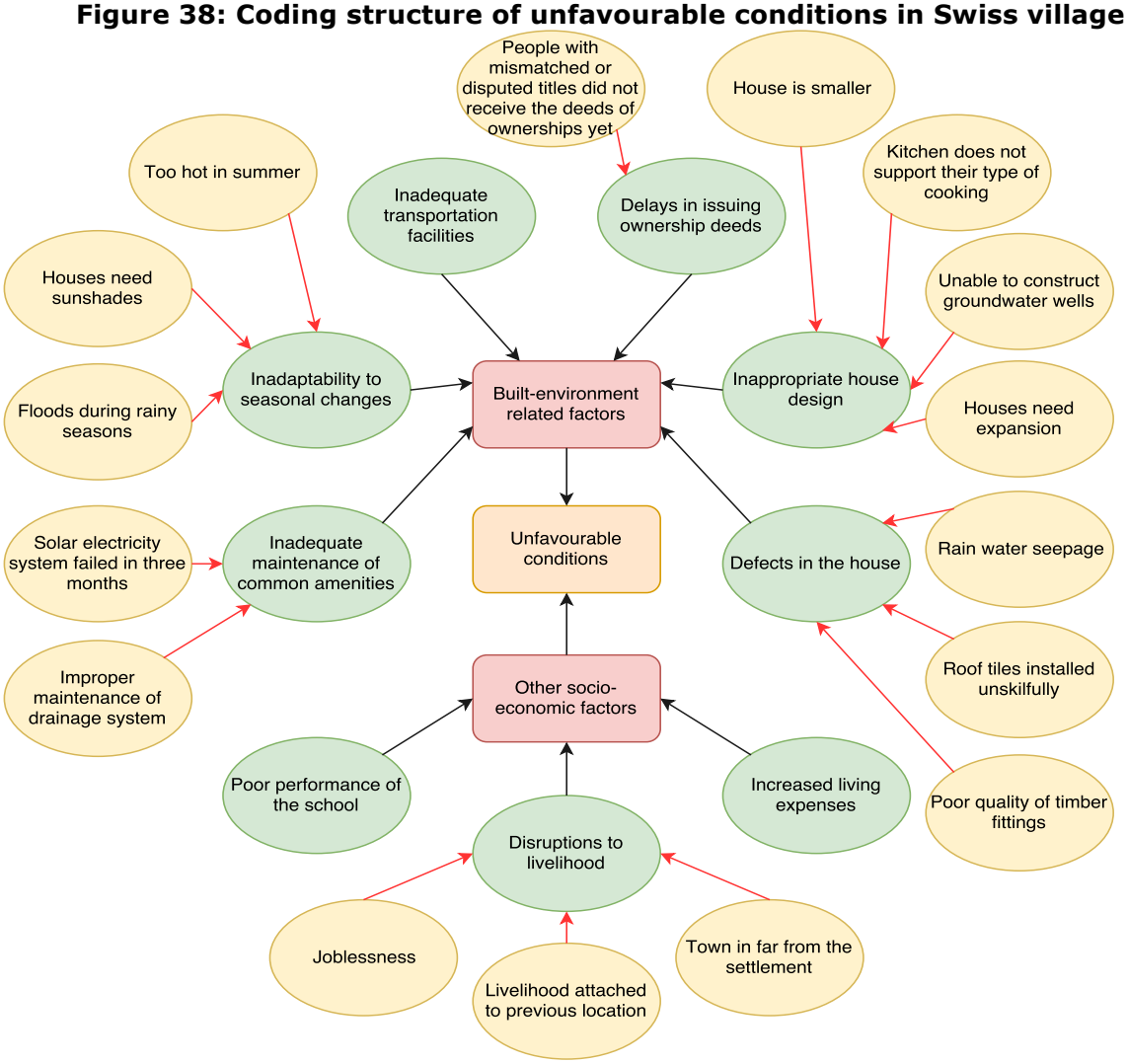


Figure 39: Cognitive mapping of unfavourable conditions in Swiss village

The main unfavourable condition identified by the respondents was the delay in issuing ownership deeds. Legal ownership gives the people a sense of belonging and emotional attachment to the property. Although at the time of the data collection (09.06.2016), the relevant local authority had started issuing without any dispute the deeds for the original beneficiaries who still lived in the resettlement, eight out of thirteen respondents who participated in the interviews had not received the deeds at that time. Thus, respondents identified this as an obstacle that repels them from the settlement.

Another unfavourable condition mentioned by the respondents is the vulnerability of the location to seasonal flooding. The drainage system referred to earlier in Section 6.3.1 built for the purpose of flood mitigation did not offer a complete prevention. The respondents further complained about the lack of drainage maintenance, which made flooding a lasting problem for some houses in the settlement. According to R17, *"…but the problem is the improper maintenance of the drainage. People dump sand and garbage in the drain, and it is now jammed".* Besides flooding, rainwater seepage was also repeatedly mentioned as an unfavourable condition during rainy season. R18 related this issue to unskilful roof tile installation. R18 and R21 added that rainwater seepage led to the enlargement of timber fittings, including doors and windowsills. Respondents considered this to be due to the poor quality of timber fittings.

All the houses were built to the same size with two rooms irrespective of the number of family members. Five out of thirteen respondents said that the houses needed to be expanded to cater to the needs of their extended families. R12, R13, and R22 complained that the rooms were smaller than what they had earlier. On the contrary, as noted in Section 6.3.1, some respondents were of the view that given house is bigger. This controversy is evidence that adequacy of size of a house largely depends on individual needs and the socio-economic standing of the beneficiaries. However, most respondents said that they had made modifications to their houses. Of the respondents who made changes, most had installed sunshades, as the houses are inadaptable for hot weather in summer. This was because the building materials used and other features of the houses were unsuitable to adapt to weather. However, the local authorities had planted shade trees along the sides of the internal roads to reduce the impact of hot weather. Besides sunshades, R11 also noted, *"The house modifications include an additional outdoor kitchen as one given does not suit our way of cooking"*. Further, R18 complained that although they had space in the land to build a groundwater well, the sewage pits constructed close to the unoccupied ground could contaminate groundwater.

Inadequate transport is referred to as another unfavourable condition by the interviewees. Thiraimadu, a remote woodland before the tsunami is located on the outskirts of Batticaloa town. Soon after the resettlement, as stated by R14, settlers had to go to the town for all their needs. Now the area is populated and developing its own social and economic characteristics. However, the communities still depend on the town for several of their needs. For example, R14 said, *"There are shops around here. However, they are more expensive than those in the town. Therefore, we go to the town for our groceries".* Thus, they expect improvements in transport facilities to cater to the growing population. A solar powered street lighting system was installed within the resettlement, but it stopped working in three months after installation owing to lack of maintenance.

Besides the above said built-environment related factors, the respondents also referred to other socio-economic factors as unfavourable conditions to live in the resettlement. A primary factor was disruption of livelihood. Thiraimadu settlement comprises people from four different villages, and most of their livelihood is based in their former villages. Thus, six out of the thirteen respondents said that they have either lost or changed their jobs after resettlement. Further, the poor performance of the resettlement school and increased living expenses are among factors identified by the respondents as unfavourable conditions.

6.3.3 Resettlement procedure

The 2004 tsunami was unexpected in Sri Lanka and rendered many people homeless. The buffer zone policy introduced by the government also further aggravated the condition. Therefore, the government had to allocate a significant amount of land for the resettlement. "Thiraimadu" was a state-owned property that was available for immediate acquisition at the time. However, in view of the urgency of the task, a socio-economic background analysis that was to be conducted prior to selecting the location was not carried out, as evident from the results of the interviews. According to nine out of the thirteen respondents, many foreign organisations offered to help with building houses for the affected people, and the government divided the land into zones and handed them over to different NGOs for housing construction.

The affected communities were temporarily housed in nearby schools and temples for a short period. In R11's words, *"We were moved to three different schools temporarily"*. Later they were moved to the allocated land being provided with temporary sheds. R18, R19, and R21 said that they lived in those temporary sheds nearly for two years. Respondents added that they hesitated at the beginning to move, as the allotted land was bare land without any infrastructure to support human habitation.

Beneficiaries were consulted to some degree unlike in other cases where issues were addressed following concerns raised by activists. R11 said that *"Communities from each village formed a steering committee with a president and members who would liaise with the NGOs".* It seems that representatives of the NGOs had held meetings with the steering committees as well as the victims. Respondents further said that although three different house plans were shown to each beneficiary, to select one from, they were not allowed to make any modification in the design. Zones and houses were allocated based on the villages where the beneficiaries were initially from. Construction of the houses took almost two years. Respondents expressed satisfaction with the way the houses were built. R16 noted, *"The houses were built to completion and the entire essential infrastructure was provided with the houses"*.

Not all beneficiaries gave up their ownership of their previous properties. The government acquired only some of the lands close to the sea for recreational activities. For instance, R21 said, *"The government took my land as it was close to the sea. Now the government has developed a children-park in my land*". Others were expected to maintain their lands without building permanent structures. Interviews further revealed that, under this tsunami resettlement scheme, people without legal ownership of a former land also were given houses to maintain social equity. In R20's words, *"We were homeless before the tsunami. We also received houses under tsunami resettlement scheme"*. Further, the local authorities were in the process of issuing an outright grant (ORG) to the beneficiaries at the time of data collection (09.06.2016). According to the respondents, ORG was granted only to the original recipients who live permanently in the settlement. Six respondents said that people who live temporarily or the people who 'sold' or rented the houses did not yet receive the ORG. Further, the ORG given also has restrictions and conditions in transferring the property.

6.3.4 Expectations and needs

Exploring the expectations and needs of the settlers is one of the objectives of this study. This section examines the expectation and needs of the "Swiss Village" settlers in relation to the resettlement. Figure 40 shows the coding structure for the beneficiaries' expectations and needs, and Figure 41 shows the cognitive mapping for those factors including their sub-factors.

Name	Sources	Refere...
Expectations and requirements	11	41
Speedier distribution of ownership deeds	11	21
Retention of their former properties' ownership	6	13
Prefer donor-built houses	4	4
Expect customised houses	1	1
Housing loans	1	1
Friendly relationships within the communities	1	1

Figure 40: Coding structure for expectations and needs of the Swiss Village settlers

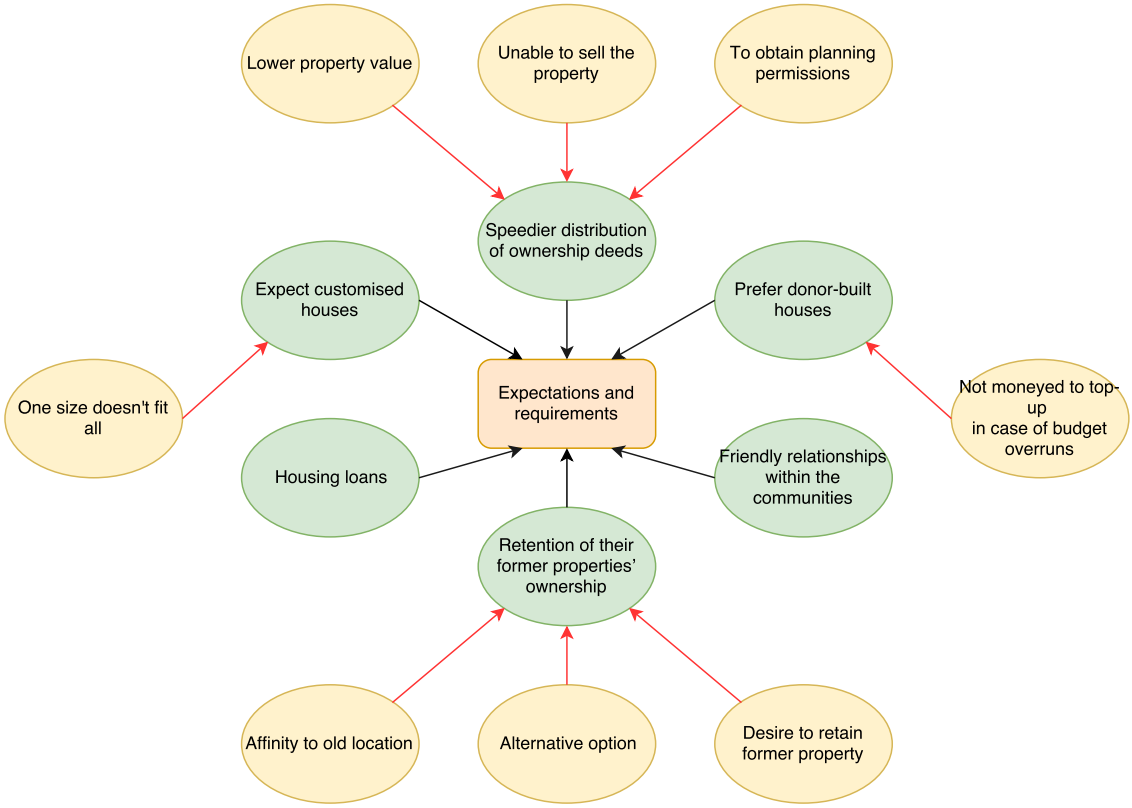


Figure 41: Cognitive mapping of expectations and needs of Swiss Village settlers

The key expectation of the respondents was speedy distribution of ownership deeds. Though some of the respondents have already received their ORGs, most had not received the deeds. Legal ownership is considered a factor that gives a sense of belonging towards a property. Besides, respondents pointed to other matters for which a deed of ownership is required. For example, R14 noted, *"Ownership deeds are essential to obtain planning permission to make any modification to the house design. However, some people have already expanded their houses without permission"*. Also, intention of making economic benefit out of the property was expressed by respondents. R11, R12, and R13 said that they are unable to sell the property with the temporary permit. Unavailability of the legal ownership document was a hindrance to that intention. As explained in Chapter 4 (Section 4.4.1), this is one of the reasons why the government also delays the issue of ownership deeds. Five out of thirteen respondents observed that some recipients sold the property

without proper legal documents. In R16's words, *"Properties worth Rs. 10-12 lakhs were sold for Rs. 3-4 lakhs as the sellers did not have the legal possession"*. The main reason for this controversy is that the people did not give up the ownership of their former properties. Therefore, the resettlement house became an alternative for them to make a financial gain.

Another expectation of the respondents is the retention of ownership of their former properties. For example, R19 said, *"We heard that the government is planning to take over our former lands. We held a protest to stop that plan, and now they have promised to return our lands"*. On the one hand, this could also be interpreted in terms of affinity for the old location, based on the statements of R14, R18, and R19 who expressed preference for their previous places over the resettlement, since they felt a sense of belonging, prosperity, and happiness there. On the other hand, as explained in the previous paragraph, it could also be interpreted as desire hold on to an option with a view to economic gain. There is, however, no actual need for houses is evident from a systematic analysis of the recipients' perspective. According to R12, R16, and R19, the government requested the owners of those lands to maintain the property without constructing any permanent structures. R19 said, *"We have planted coconut trees in our former land"*. This shows that, initially, the government also had no plans on how to deal with properties that come under the buffer zones.

Interview results show that the communities prefer donor-built houses to compensation. R11, R19, and R22 noted that they asked for wholly built houses through their steering committee despite an option given to receive funds for self-built houses. Respondents expressed satisfaction with the houses received. Because, as discussed in the Section 6.3.1, most of the beneficiaries were not wealthy enough to top-up the funds in the likely event of budget overruns. On the other hand, R12 among others complained, *"All the houses were built in the same size despite family sizes of the recipients"*. This statement indicates preference for customised houses and they do not approve of a "one size fits all" policy. However, large-scale housing schemes often do not offer customised houses owing to practical difficulties. Besides the above-stated considerations, respondents expected housing loans for modifications to the houses and friendly relationships among the communities.

6.4 Case 3: Samuthrapuram resettlement, Kaluwanchikudy

Kaluwanchikudy is a DS division in Batticaloa District, with a 14 km coastline. Its eastern boundary is the Indian Ocean, and the western boundary is the lagoon. In this tsunami-affected area, 13,780 families were affected and 2,273 families were displaced (The

Reconstruction and Development Agency, 2006). Following the tsunami, the buffer zone policy rendered many families homeless and created a huge demand for resettlement. People were relocated inland in a large area of land acquired by the government, with the assistance of NGOs. Data were collected in the "Samuthrapuram" resettlement where 98 houses were built by World Vision Lanka for people from five different villages.

Every settler in this zone was given 10-15 perches (0.253-0.0379 ha) of land with a house. Electricity and drinking water facilities were also provided, and a preschool and a school were constructed within the settlement. The principal occupations of the community are supported by its rural settings with Palmyra trees and suitable for rice cultivation, and its proximity to sea and to the lagoon giving significance to fishing. The community residing in the resettlement also do informal daily-paid jobs. According to Batticaloa Disaster Risk Reduction Plan (UN-HABITAT, 2013), this area, like Kallady and Thiraimadu, is also prone to tsunami, cyclone, and floods. The neighbourhood village of "Sooriyapuram" is the host community for this settlement. Another important fact to note is the researcher observed more houses to be abandoned in this settlement than in other settlements.

Seven members of "Samuthrapuram" resettled community, and Eight (08) members of "Sooriyapuram" host community expressed their views on factors that attract them to a built-environment, factors that repel them from a built-environment, resettlement procedures that they underwent, and their expectations and needs in the resettlement programme. Resettled community respondents are referred as R24 to R30, and host community respondents are referred as H1 to H8 within the text with all identities anonymised.

6.4.1 Favourable conditions

Unlike the previous two settlements, this settlement has the involvement of the host community. The role of the host community in determining the success of resettlements has been recognised in earlier studies (Chambers, 1986; Kabra & Mahalwal, 2014). Thus, favourable conditions for the host community in the post-resettlement context are also reported along with favourable conditions for the resettled community. Figure 42 shows the coding structure for the favourable conditions, and Figure 43 shows the cognitive mapping for these factors and their sub-factors.

Name	Sources	Refere...
Favourable conditions	14	91
Host community	8	60
A new primary school for the location	8	9
Availability of physical infrastructure	8	29
Location getting populated	6	15
Attempts to maintain the social equality	5	7
Resettled community	6	31
Availability of physical infrastructure	6	19
Improvements in living standard	5	7
A new primary school for the location	2	2
Houses are spacious	1	3

Figure 42: Coding structure for favourable conditions in Kaluwanchikudy

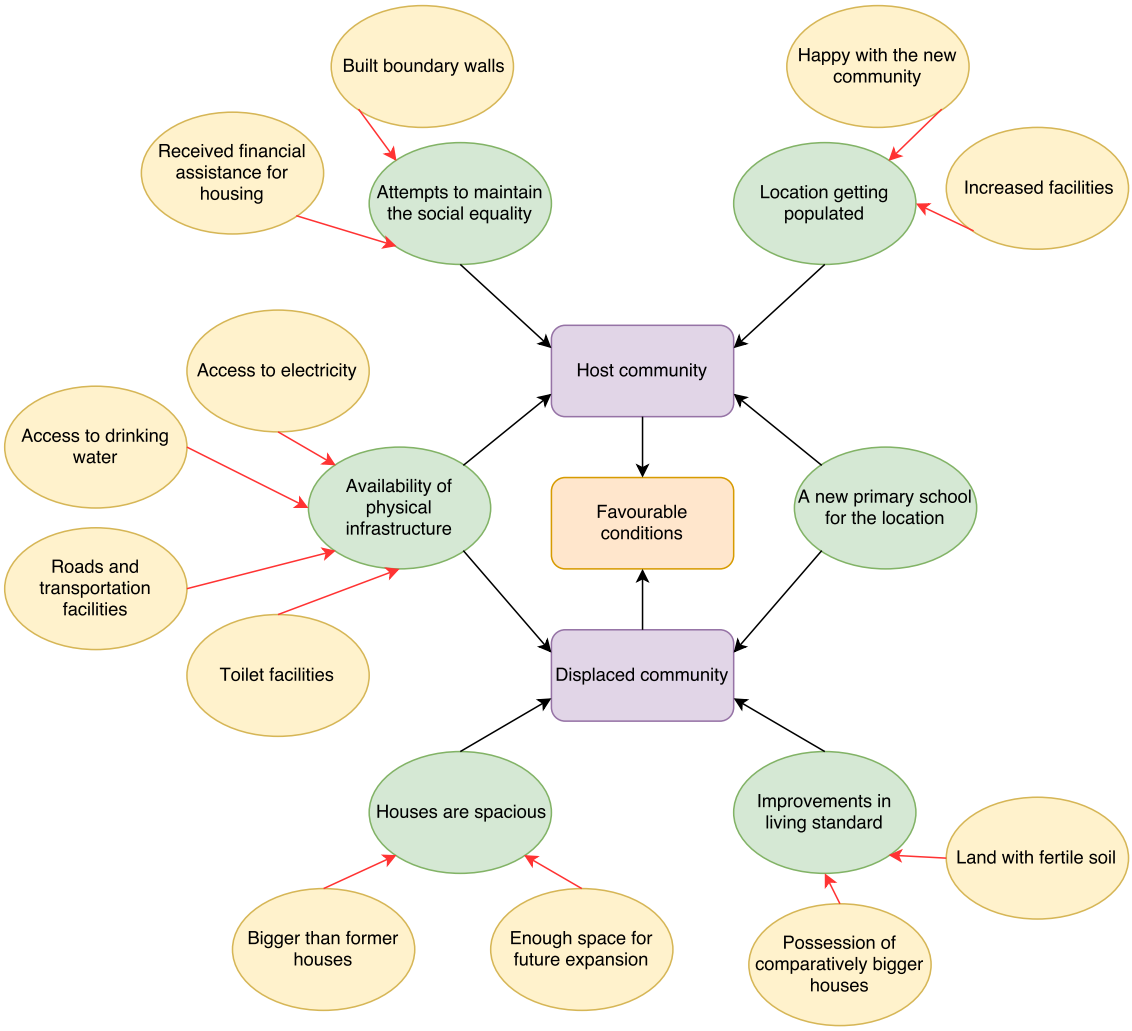


Figure 43: Cognitive mapping for favourable conditions in Kaluwanchikudy

Both resettled, and host communities prioritised the availability of physical infrastructure, especially running water and electricity, as the primary favourable condition. R29 stated, *"My former house did not have electric connection. These resettlement houses have electricity"*. Likewise, H7 said, *"This place was remote without infrastructure facilities. After resettlement, this area is provided with electricity"*. Availability of electricity is considered as a significant development and identified as a favourable condition in comparison with their previous conditions by both resettled and host community respondents. It will be fair to assume that this need not be a significant favourable condition for those who had electricity in their former location. Besides electricity and water, the availability of circulation roads, transport facilities, toilets, sewage, and drainage are among infrastructure mentioned as favourable conditions by both the communities. Notably, H2 said, *"There were no circulation roads before. There were just sandy paths on which we cannot ride bicycles. We used to push our bicycles to the main road to ride from thereon. Circulation roads arrived with the resettlement scheme"*. This shows that the provision of infrastructure for the resettled community benefitted the entire society in the location. Besides, a primary school was constructed within the settlement with classes from Grade 1 to Grade 10. Both resettled, and host community expressed satisfaction with the school and named it as a favourable condition.

Respondents from the resettled community found that their life in the resettlement to be better than that before the tsunami. Possession of comparatively bigger house in a land with fertile soil is contributed to their betterment. R26 said, *"This place was a plantation before. Later, it become a woodland for lack of maintenance, and the government acquired the land for resettlement. Thus, the soil is good for gardening"*. R29 added, *"We received a bigger and better house than what we lost"*. These statements indicate satisfaction of the settlers regarding the given land and the house. Further, the respondents noted that the houses are spacious and the empty ground available within each plot is usable for future expansion.

Respondents from the host community expressed their contentment about the location getting populated. H1 stated, "That land was a woodland which was used for many illegal activities. It has been cleared, and people live there. Now I feel safe to live here". H2, H3, H6, and H7 expressed similar thoughts associating population increase with safety and enhanced facilities. Besides, the host community also received compensation to build houses in their owned lands. NGOs also supported some of the host community members in building houses and boundary walls. For instance, H1 stated, "We used to grow thorn bushes as fences. Now we have boundary walls". Such efforts to ensure social equality is

considered as favourable conditions by the host community. Further, respondents from both the communities claimed that they live in harmony.

6.4.2 Unfavourable conditions

Unfavourable conditions for the built-environment and other socio-economic needs are described as expressed by the respondents representing host and resettled communities. The coding structure of the unfavourable conditions are shown in Figure 44, and Figure 45 and Figure 46 shows the cognitive mapping of these factors and their sub-factors, separately for resettled and host communities.

Name	Sources	Refere...
Unfavourable conditions	15	88
Host community	8	22
Built-environment related factors	7	17
Unimproved hospital facilities	7	7
Unimproved facilities	3	3
Unrepaired connecting road	3	5
Location's vulnerability to the flood	1	2
Other socio-economic factors	3	5
Changes in societal behaviour	3	5
Resettled community	7	66
Built-environment related factors	7	65
Distance	7	10
Unimproved hospital facilities	6	6
Insufficient space of the houses	5	15
Location's vulnerability to the flood	5	7
Inappropriate design	4	6
Inferior quality of the construction materials	4	8
Unrepaired connecting road	3	7
Water contamination	3	3
Absence of legal possession	2	3
Other socio-economic factors	1	1
Troubles in continuing business	1	1

Figure 44: Coding structure for unfavourable conditions in Kaluwanchikudy

The most unfavourable built environment related condition referred to by the interviewees from both resettled and host communities was the unimproved hospital facilities. Seven out of eight host community respondents and six out of seven resettled community respondents made that observation. For example, H8 noted, *"There were no hospitals near this location from the beginning, and we went to the town for our medical needs. Now, this area is populated, and the need for a hospital is more important than before"*. This statement shows that public health facilities had not improved to match the population increase in the location. Another built environment related unfavourable condition repeatedly mentioned by both the communities is the unrepaired connecting road. The researcher also noticed that the road connecting the settlement to the main road was in a

bad state at the time of data collection. H1 said, "*The connecting road is unusable especially during the rainy season. Heavy vehicles brought along this road frequently during the construction and renovation of the resettlement have damaged the road, which was never repaired"*. R25, R26, and R29 agreed with that comment. This condition causes difficulties in day-to-day transport as well as emergency transport for both communities.

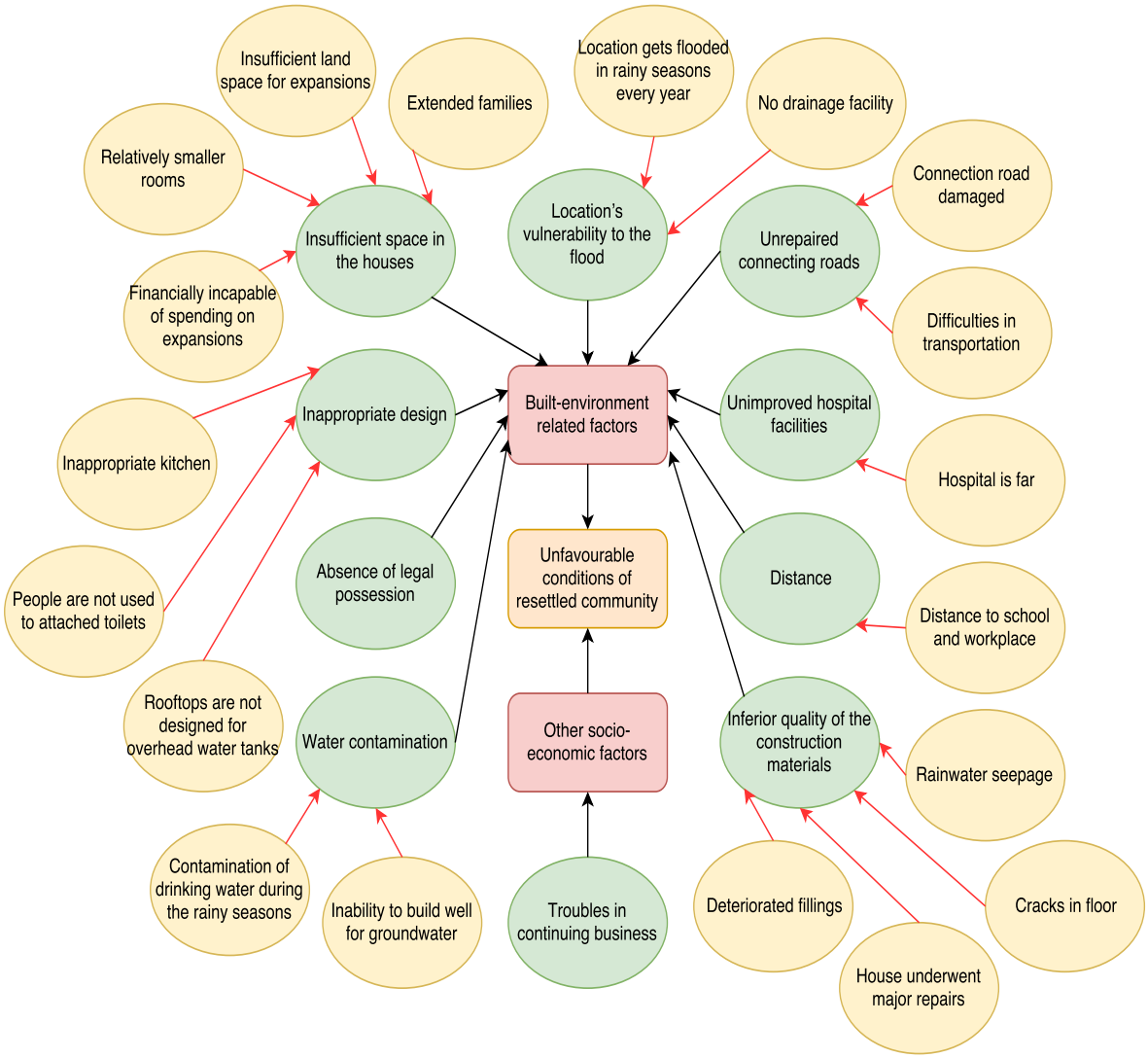


Figure 45: Cognitive mapping for unfavourable conditions of resettled community in Kaluwanchikudy

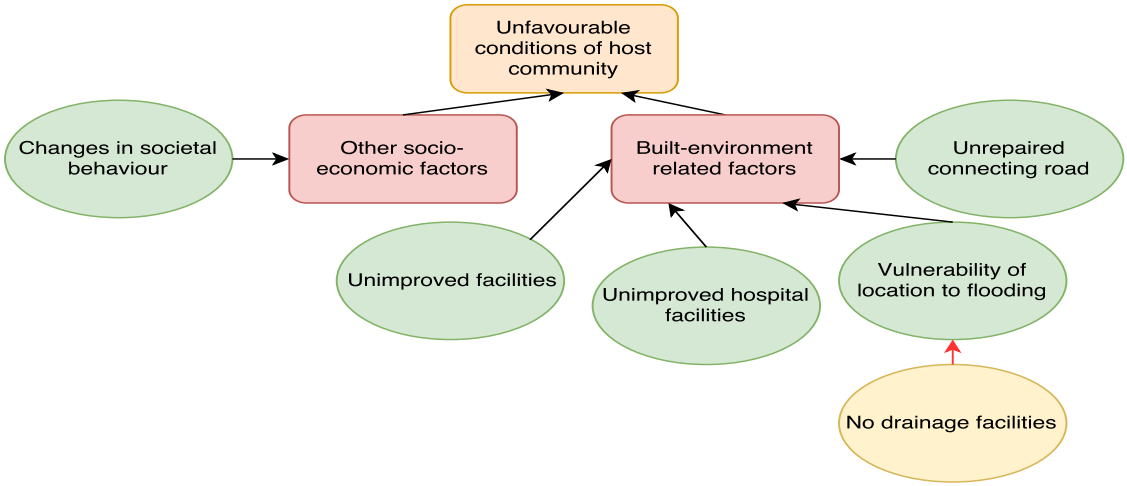


Figure 46: Cognitive mapping for unfavourable conditions of host community in Kaluwanchikudy

The vulnerability of the location to flood was another unfavourable condition noted by both communities. R26 said, *"Our lands get flooded during rainy seasons"*, and H1 agreed stating *"It usually floods in this area almost every year"*. R27 added that *"There are no paths for the water to drain as no drainage facilities were provided. As a mitigation measure, we elevated one side of our land by filling it with earth*". These statements point to the lack anticipatory measures to address the problem of flooding, though the location was already known to be flood-prone location. This is among some of the drawbacks of the current land selection procedure.

Another unfavourable condition frequently pointed to by the resettled community respondents is insufficient floor space in the houses, although some respondents agreed that the houses given were bigger than what they had before. R25, R26, R27, R28, and R29 complained that insufficiency of space posed difficulties in accommodating their extended families. In R28's words, *"The rooms were too small to meet our needs, and we added a small room later"*. Space requirement is, however, a matter of personal preferences, based on the needs and expectations of individuals. But, R27, R28, and R29 also noted that the land space was inadequate to expand the houses according to changing needs, and R25, R27, and R28 added that they lacked financial resources to spend on expansion.

Inappropriate kitchen and toilet design was another significant unfavourable condition to resettled community. R26 said, *"The kitchen is fit for one person to stand and cook, but that is not the way we usually cook", to which* R28 added, *"Foreigners built the kitchen according to their way of cooking. We do not stand and cook".* The traditional way of the

community's cooking involves several people seated on the floor or low stools and, besides, they also use firewood available in the surroundings as fuel. The kitchens for the resettlement houses are designed for gas-cookers and incurs additional cost of upkeep. The resettlement did not, however, lead to an increase in family income to spend more on this upgrading. In addition, the settlers were unaccustomed to attached toilets. R26 affirmed this: *"We do not use the attached toilets. We are unhappy about unpleasant odour that could contaminate the air indoors*". As the settlers were unaccustomed to attached toilets, the toilets were not used in some houses. Respondents also complained that the houses were not designed to support overhead water tanks. Thus the unsuitable design of houses including the kitchen and toilet point to very poor attention being paid to the socio-economic characteristics of the communities during house design for resettlement.

Inferior quality of construction materials is another unfavourable factor noted by the resettled community respondents. R29 pointed out: *"Most of the houses have gone through major repairs. Some people had to re-lay their whole floor while some had to replace all the roof tiles, since the materials used were not good"*. R26 and R27 added that the finish and fittings of doors and windows were not of good quality and that they need replacement, and R26 pointed out that *"The door lintels had already deteriorated owing to woodworm attack. They are not of good quality"*. Cracks in floors and rainwater seepage are among other results of poor quality materials. These faults point to inadequate care in material selection and to shoddy workmanship. Respondents associate this situation with greed for profit and corruption of building contractors.

Distance to school and workplace yet another negative feature of the location since the school available within the settlement is only up to secondary school level, and children have to travel to the town for higher classes. According to R24, *"People from different villages live in the settlement, and most of the children do not want to change their schools. Therefore, they travel daily to their old schools. This is also a reason for some people to leave the settlement"*. Like the distance to school, distance to workplace is also concern for the settlers. In R25's words, *"Travelling to work daily from here is difficult as I do not own a vehicle and need to be at work early morning"*. R24 and R27 also had similar complaints. Respondents noted that people abandon the settlement and return to their former places, despite legal barriers, owing to such issues. This shows that the socio-economic conditions of the settlers were not taken into account in selection of the location, and alternative employment options were not created to compensate their loss of employment opportunity.

Settlers had not been given documents of legal ownership up to the date of data collection (14.07.2016). However, the researcher observed that many houses were not occupied by

the original beneficiaries and that they had been sold or rented. Respondents emphasised the need and importance of possessing the ownership of the properties. R24 stated, *"Deeds have not been issued to anyone yet. Yet, people buy and sell without following legal procedure. I do not know what the consequences will be"*. Thus, lack of legal possession and restrictions laid down in the given permit as mentioned comprise an unfavourable condition. In addition to abovementioned factors, drinking water contamination during the rainy seasons and inability to build a groundwater well owing to improper sewage location are some of the other factors mentioned by the respondents as built environment related unfavourable conditions of the site.

In the view of the host community, no facilities other than access to electricity and drinking water, were improved in proportion to increased population. H3, H4, and H7 complained that those inadequacies still exist and are as bad as before. Besides built environment related unfavourable conditions, difficulty in continuing business activities, and changes in societal behaviour were among socio-economic hostile conditions referred to.

6.4.3 Resettlement procedure

Kaluwanchikudy being a tsunami-affected areas in the Batticaloa District, managing the housing needs of the affected population had become a significant burden to the government since tsunami and especially after the buffer zone policy. To overcome its financial deficit, the government invited and accepted foreign funding bodies with strong involvement in providing resettlement houses at that time. According to R26 and R28, the government acquired a wooded private land that was lying waste and handed it to foreign NGOs for housing construction. During construction, the affected people were temporarily housed in schools and temples. A fundamental criterian for recipient selection was one's proximity to the sea. R29 said, *"My house is within the 100 m from the sea. Based on that criterion I was selected as recipient"*. R25 and R26 also made similar statements.

R28 said that a house plan was shown to the recipients to indicate what the house will look after construction. But R29 complained that they were not given details of the houses until they received the keys. Based on these contradictory views, it seems likely that house plans were shown to randomly selected recipients. This further indicates that consultation with the beneficiaries to identify their concerns and needs about the houses were either minimal or altogether absent. Respondents noted that many foreign organisations were involved in housing construction and people from five villages were resettled in the location. It is appreciable that the socio-economic needs concerning the houses differed with the village to which one belonged. Thus, without adequate consultation, the

understanding of the foreign organisations about the housing needs of the beneficiaries seems questionable.

According to R25, R26, R27, and R29 housing construction took two years to complete. All the houses were built to the same plan, and the keys were handed over to the recipients. However, the respondents were critical of the quality of the houses. R29 observed that the inefficiency of the construction contractors was the cause of the poor quality. Besides houses, a school was built within the settlement as a part of the scheme, and electricity, water supply, circulation roads, and sewage systems were provided for all houses. As a protective measure against tsunami, casuarina trees were planted around the settlement to act as a barrier.

Recipients were given a permit to ascertain their occupation of the houses. However, as stated by six out of seven respondents, the beneficiaries did not receive legal ownership of the properties up to the time of data collection (14.07.2017). According to R25 and R26, the beneficiaries were told at the time of handing over the houses that the ownership deeds would be issued only after ten years. The reason for the delay, as interpreted by R25, R26, and R29, is that the government doubted if the beneficiaries would stay on in the resettlement for long. In R26's words, *"Government officials noticed that some people had sold their houses and moved to their former properties, and I think that is why the government is unwilling to issue our ownership deeds"*. However, as noted by R25, the properties can be transferred to the children of the beneficiaries.

Alongside, the beneficiaries continued to own their previous properties that lay within the buffer zone. R26 said, *"We still have the ownership deeds for our former properties. However, we cannot build any permanent structure on that land. The government asked us only to maintain the land"*. This shows that the government did not acquire the lands within the buffer zone, and buffer zone restrictions were not strictly enforced. R28 and R29 noted that this was a reason for people selling or renting resettlement houses. In R29's words, *"People see resettlement houses as an additional asset as they still own their former lands, and that is why they sell or rent their resettlement houses"*.

From the host community's perspective, all eight respondents said they were not officially informed of a resettlement coming up in their neighbourhood. For example, H6 said, *"We got to know when the neighbourhood area was cleared for construction. But nobody informed us officially"*. Nevertheless, they received a grant from the government for housing construction. H2, H3, H4, and H6 said that a foreign NGO topped up the grant to build the houses for them. In the words of H1, *"This is my land. I received Rs. 200,000 from the government for housing construction. I gave that money to an NGO, and they*

contributed some money and built this house for me". This indicates that the location of the host community was developed in parallel to avert social imbalance. Also, sewing classes for homemakers, loans for livelihood development, and water pumps for agricultural lands were provided by some NGOs to improve job opportunities and ease resource scarcity in the location.

6.4.4 Expectations and needs

This section describes the expectation and needs of the "Samuthrapuram" settlers and their hosts relating to the resettlement. Figure 47 shows the coding structure for the expectations and needs of the beneficiaries, and Figure 48 shows the cognitive mapping for these factors and their sub-factors.

Name	Sources	Refere...
Expectations and requirements	14	63
Host community	8	39
Populated location	8	15
Job opportunity creation	5	5
Social integration facilities	5	11
Parallel development activities	3	8
Resettled community	6	24
Proximity to previous land	5	9
A good relationship with the host community	2	2
House design appropriate to traditions and culture	2	4
Immediate issue of legal ownership	2	4
Job opportunity creation	2	2
Improved facilities	1	2
Involve in the process of construction and monitoring	1	1

Figure 47: Coding structure for expectations and needs of Kaluwanchikudy settlers and their hosts

Samuthrapuram resettlement has settlers from five (05) different villages. In the perspective of the resettled community, comparatively, willingness to stay on in the resettlement is low if their place of origin is far from the resettlement. The researcher also noticed more vacant houses in Samuthrapuram than in the other resettlement studied. According to R28, *"People originally from 'Kaluwanchikudy' are living here permanently, but others come and go. Some have even sold or rented the houses"*. R26 and R29 expressed similar views. R24, R27, R28, and R29 said that several people whose places of origin are farther have rented their houses to local people. Frequent reference to this by the respondents shows that the proximity to former location of the settlers is essential to ensure longevity of the resettlement. R26 and R27 added that the fear of tsunami has faded with time, and now they are not scared of living along the coast. This can be considered an additional reason why people leave to return to their former lands.

Also, healthy relationship with the host community is one of the most stated expectations of the resettled community. In this resettlement, respondents expressed satisfaction with their relationship with the host community. However, in the view of the host community, the two communities remain isolated. H1 stated, *"After the resettlement was named 'Samuthrapuram' and ours 'Sooriyapuram' and they are separated. We do not go that side, and they do not come to this side"*. H7 added, *"We have no issues with the new community. We go there only if there is a funeral"*. These observations show the social integration of the communities is yet to happen. It is fair to assume that labels used to identify target victims for settlement have lasted, leading to an ambience of mutual isolation between the communities.

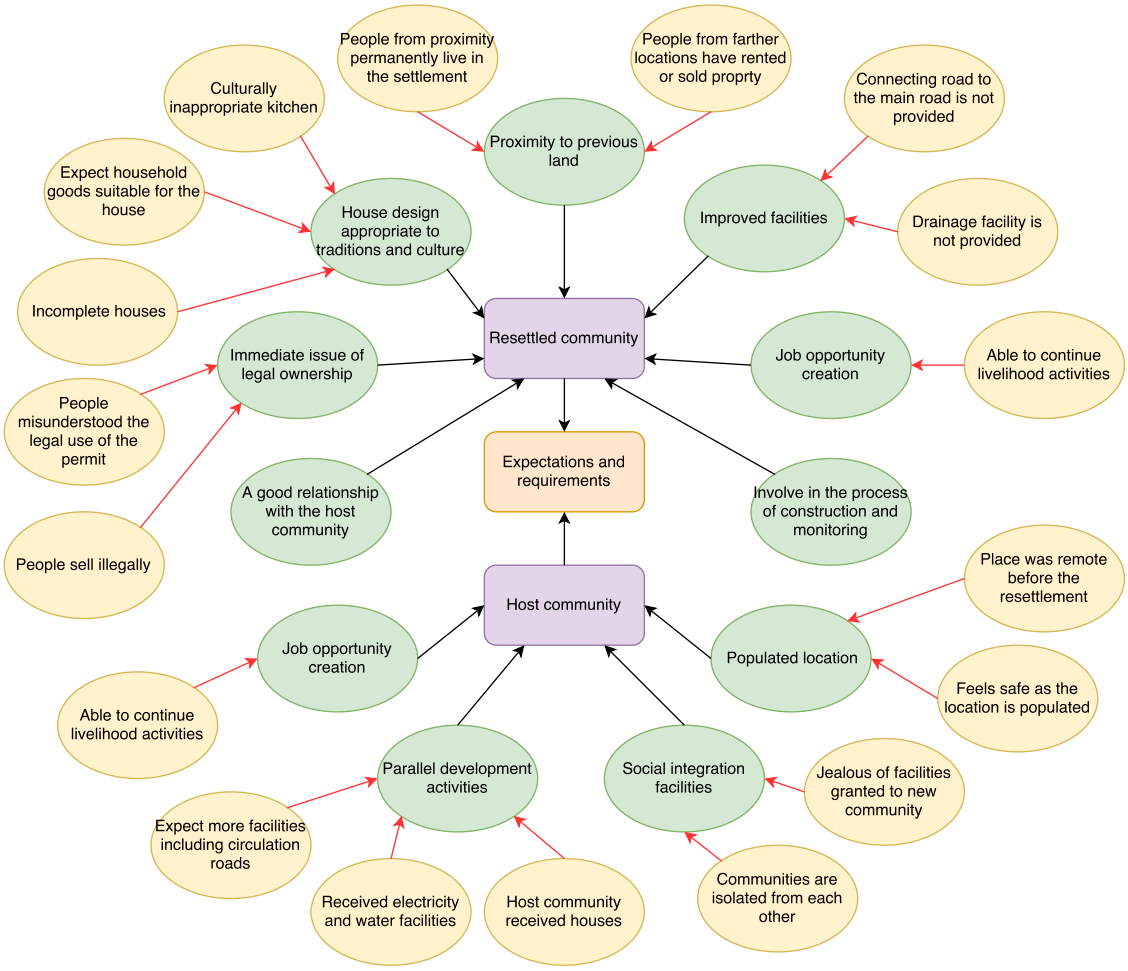


Figure 48: Cognitive mapping of expectations and needs of Kaluwanchikudy settlers and their hosts

Change of place could have an impact on the livelihood of communities depending on the nature of their work, especially location-oriented livelihood such as fishing and farming. The principal occupation of most of the resettled community is fishing as they lived along

the coast. According to R29, the resettlement offers access to a different part of the sea which allows them to continue their livelihood activities. Since principal occupation of the host community is not fishing, there was no competition based on. In the words of H1, *"People originally from this area do not fish, but the tsunami-affected setters do. It has no impact on our livelihood"*. Further, as mentioned in Section 6.4.3, it is evident that activities initiated by the NGOs to create the job opportunity as a part of the resettlement project helped reduce economic imbalance between the communities. Both the communities reflected satisfaction in this matter, making it a fulfilled need of both the communities.

All the eight respondents from the host community expect that the location will be populated. H5 stated, *"This location was a woodland before. We bought this land for a pittance. This was a very lonely place then. After the resettlement, the value of land has increased"*. H6 added that *"The location had only dirt roads and the houses were just small huts. We have good roads and stone houses after the resettlement"*. The host community also appreciated the initiative of the government to develop the host community in parallel. Besides, H1 remembered that they were once scared of walking through the wooded area which is now the resettlement, since they feared that illegal activities took place in the woods. These views of the host community affirmed their satisfaction about living in a populated location.

The resettled community expected a house design, the kitchen especially, appropriate to their tradition and culture. R25 said, *"Builders said that the corner room of the house is the kitchen. But it has no chimney or any other characteristic of a kitchen. It is just another room to me"*. Respondents added that a foreign NGO built an open 'L' shaped kitchen outside some of the houses after several requests from the settlers. R29 said that *"The NGOs promised us the necessary appliances such as a gas cooker, appropriate to the kitchen design. But they were never given"*. It is clear that the people expected houses that reflect their lifestyle, and that a new method of cooking, which also incurred a cost of maintenance, was unacceptable to the respondents especially since their income remained the same. Besides, the houses were handed over to the beneficiaries without fitting the doors for the rooms and sashes for the windows. In the words of R25, *"Doors and windows were not fitted for the rooms. We had to ask the officials several times to got it done"*. This shows that the communities could not afford to upgrade their houses and expected a completed house from the authorities.

The immediate provisions of legal ownership has been identified as another expectation of the setters. What the recipients were given was a permit affirming their occupation of the houses, which did not imply ownership of the property. Thus, the settlers expect a speedy issue of ownership deeds. However, some responses show that the beneficiaries have

misunderstood the legal position regarding the permit. For example, R24 stated, *"People sell the properties based on the permit"*. Further, respondents were concerned that this illegal sale of houses could affect land prices and the property market negatively. Also the, recipients wished that they were involved in the processes of construction and monitoring.

From the perspective of the host community, though, development activities occurred in parallel to the resettlement process, they found them to be inadequate. H2 commented, *"Circulation roads were only provided within the new settlement, but not for us"*. Further, only some members of the host community received new houses and this led to a sense of social imbalance within the host community. According to H4, H5, and H7, though the location is not within the buffer zone, the host community was also affected by tsunami. Therefore, they expected to be treated and supported by the NGOs in ways similar to the resettled community. H2 said, *"Some people who were not affected by tsunami came here and registered themselves as tsunami victims. They leave the place after securing a house"*. This statement is an expression of the feeling of the host community that not all the settlers deserved houses. This led to some unpleasantness between the communities. For example, H2 stated, *"People from the host community dump their garbage in an open space close to the new settlement"*. Respondents form host community seemed to desire more efficient social integration facilities to build a better relationship with the new community.

6.5 Case 4: Arnhall

Arnhall is a tea plantation village in Badulla district with a majority of tea plantation workers. These tea plantation workers still live in line-houses which were established in the 1870s. The line-houses are owned by a Regional Plantation Company (RPC). In 1997 this village had signs of a landslide for the first time. Consequently, a land was allocated for resettlement to protect 42 families who lived in a vulnerable part of the village. The allocated land was located in 2 km away from the village. Construction materials and financial assistance were provided to the people for housing development. However, some families still live in the village for various reasons including livelihood and dissatisfaction with the land provided. A major landslide that occurred in an adjoining village in 2016 created tensions and alerted the officials. Thus, following investigations, the entire area was declared as a landslide-prone zone after. Now negotiations are ongoing for the housing construction for the families who still live in this village.

The primary school of this village still functions for regular education activities, and villagers consistently come to the village for work in the plantation. Thus the village is remains well populated. However, the physical-development funds for the school and the

village have been withheld by the government they are in a landslide-prone zone. Data were collected from the villagers living in the village to identify their needs and expectations of resettlement. Six villagers were interviewed to identify the factors that attract them to and factors that repel them from a built environment, the resettlement procedures that they are going through, and their expectations and needs in the resettlement programme. Respondents have been anonymised and identified as R31 to R36 within the text.

6.5.1 Favourable conditions

As explained in Section 6.5, the villagers have been allocated land and negotiations are in progress for housing construction. Hence, the respondents identified favourable conditions which attract the villagers to the allotted land and to the idea of resettlement. Figure 49 shows the coding structure for the favourable conditions, and Figure 50 the cognitive mapping of these factors and their sub-factors.

Name	Sources	Refere...
Favourable conditions	5	26
Unfavourable conditions in the current location	5	15
Proximity to the present village	2	2
Availability of essential infrastructure facilities	2	5
The habitability of the proposed land	2	4

Figure 49: Coding structure for favourable conditions in the proposed location for Arnhall villagers

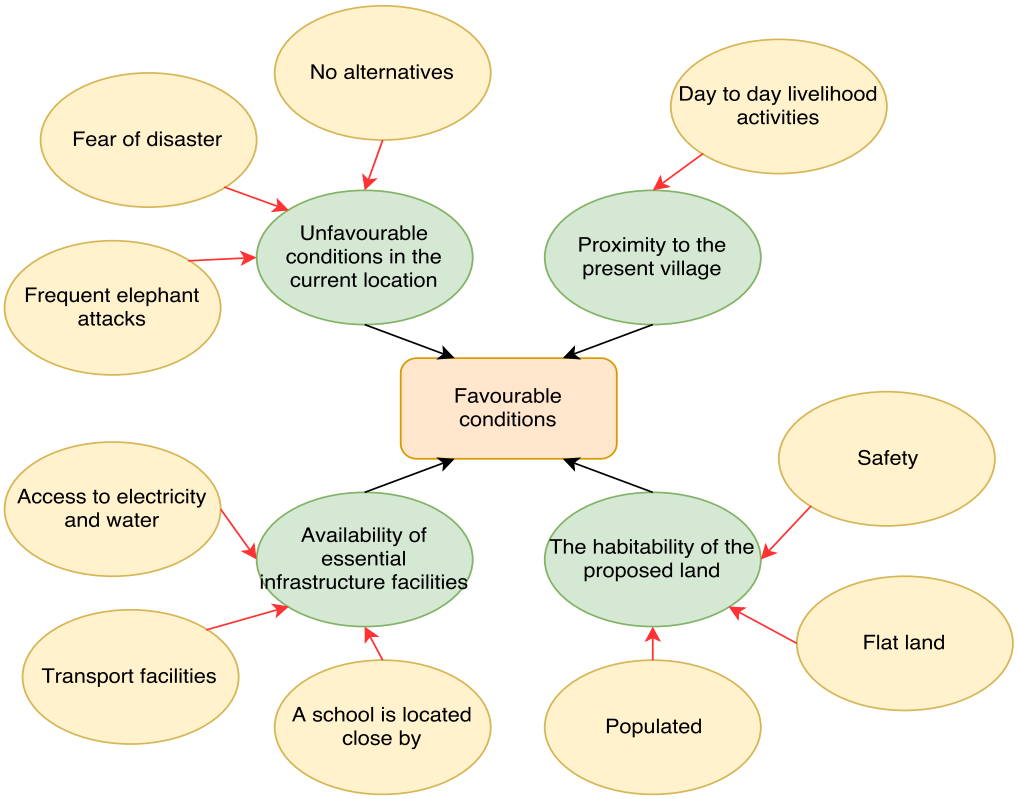


Figure 50: Cognitive mapping for favourable conditions in the proposed location for Arnhall villagers

The attraction of a new location depends on many factors. According to five out of the six respondents, the key factor that attracts the villagers to the resettlement comprised adverse conditions in their current location. The respondents expressed a sense of fear to live in the present location, as stated by R32: *"They keep talking of landslides. We do not know what could happen with the next rain. We are scared"*. R34 and R35 uttered similar views expressing their fear of living in their current location. R36 added, *"I am not particularly well-off to buy a new land. Therefore, I am ready to accept any safe location rather than live in a landslide-prone zone"*. This confirmed that several of the villagers were ready to accept the allocated location as there was no other option that assured safety. Frequent elephant attack was a problem faced by the villagers. For example, R32 said, *"Nobody provides a protective measure to safeguard us from wild elephant attack. Nobody takes responsibility for the damage done by them"*. Therefore, the villagers desire another location that was safe from elephant attacks.

Another favourable condition of the new location as noted by the respondents is its proximity to the present village. R31 said, *"The allotted land is within 2 km distance from the village"*. Most of the people in this village are traditional tea plantation workers, who need to visit the village for their daily livelihood. Hence, proximity to the present location suited the villagers to continue their livelihood activities. Besides, availability of essential infrastructure facilities in the new location was another attracting factors to the respondents. R36 stated, *"The electricity line is laid across the allotted land. Therefore, it is easy to get connections to all the houses".* R31 added, *"The location has water and transport facilities up to a certain extent".* Besides, the presence of a school close to the proposed land is an added advantage.

Habitability of the proposed land is another factor noted by the respondents as a favourable condition. R36 said, *"It is a good flat land and the NBRO certified it as safe from landslides."* R31 also agreed that the land is safe from any future disasters. Further, respondents added that the proposed location is populated which has houses around.

6.5.2 Unfavourable conditions

Unfavourable conditions of the proposed land are not yet explored by the villagers as they still live in Arnhall. However, five out of the six respondents expressed reluctance for moving to the new location. The reason for the reluctance is that the land is located close to a cemetery. In the words of R35, *"I do not like to move to the new location. Will you accept a house which is in a cemetery?"* Similarly, R33 said, *"I am not against resettlement. I do not like the location. I'll go if I get a proper place."* These statements proved that the villagers are not against the concept of resettlement, but they are concerned about the

location. An inappropriate location, in the point of view of villagers, is an unfavourable condition to live. Further, R33 complained that the location would also be vulnerable as the infrastructure facilities will not be available immediately.

Livelihood in the current location was another factor against moving to another location. Most of the people who live in this village are traditional tea plantation workers. They cannot move to any other job owing to their level of education and expertise. In addition to working in the tea plantation, people cultivate crops such as leaks, pepper, and betel leaf, and herd cattle and sheep for additional income. Hence, they seemed reluctant to leave the plantation as the allotted land was not as spacious as their present land. Besides, the likelihood of landslide in the area seemed not certain and discouraged the villagers from moving.

6.5.3 Resettlement procedure

In 1997, Arnhall villagers noticed for the first time signs of a landslide. But the major landslide in an adjoining village in 2016, caused a rush for resettlement in all landslide-prone areas. Following a scientific test conducted by NBRO, the village was declared as landslide-prone. R34 said in agreement, *"People from NBRO brought some meters and did some tests and measurements."* R36 added, *"After some soil tests, people from NBRO said that this place is in danger."* Subsequently, the villagers were informed that the village has potential for a landslide.

Unlike in previous cases, lands of this village were owned and managed by an RPC. Therefore, the authorities informed the plantation management of the disaster threat. Five out of six respondents said that the plantation management did not officially inform them about the threat. However, R36 noted, "T*he plantation management held a meeting and discussed the resettlement initiatives."* R36 added that the authorities conducted a training programme for landslide preparedness as well. These contradictory statements of the respondents can be interpreted in two possible ways. Firstly, most of the villagers did not participate in the meeting owing to reluctance or unawareness; and secondly, the authorities lacked rigor in creating awareness and persuading them to participate. However, irrespective of whether either one or both possibilities are correct, the vulnerability of the village to disaster, and the importance of resettlement seems inadequately conveyed to the villagers. Further, the villagers were not compelled to evacuate the village. According to R32, R34, and R35, police and other relevant officials ask the villagers to move to safer locations only during the rainy season.

Respondents affirmed that the authorities took resettlement initiatives to safeguard the villagers from future landslide. A land has been allocated for the villagers, and negotiations

were on to build houses. In addition, according to R31, two acres of land was earmarked to relocate the school currently functioning in the village. As discussed in the preceding Section 6.5.2, the villagers are unhappy with the land allotted for houses, as it was next to a cemetery. This is among reasons why the villagers were reluctant to participate in the resettlement processes. R33, R35, and R36 acknowledged that the government to had no other choice, as most of the suitable lands close to the location come under forest reservation.

Unlike previous cases, housing arrangements for this villagers are initiated by the plantation management, as most of them are plantation workers, and the plantation company owns their current line-houses. According to R29 and R30, plantation management agreed to provide construction materials including blocks, sand, cement, roof-tiles, and Rs. 300,000 cash for each family to build the houses in the allotted land. The recipients have to bear the cost of labour. R30 added *"We can apply for a loan for the amount of Rs. 100,000 which we have to pay back."* However, not all the villagers were pleased with this arrangement (reasons for which are given in Section 6.5.4). Four out of six respondents said that the resettlement process is despairingly delayed. In the words of R34, *"It has been a long time that our neighbouring village got affected by the landslide. Those people did not get houses yet. They are still in temporary camps. How could we expect houses before a disaster hit our village?"* In contrast, R36 said, *"Some villagers are against this process as they did not like the location. Therefore, the authorities are waiting for all the villagers to agree. This delay would put everyone in danger if a landslide struck."* However, these statement show that the resettlement process is delayed and procedures are not transparent.

6.5.4 Expectations and needs

After the village was declared to be in a landslide-prone zone, the villagers expected early resettlement. The respondents expressed their expectations and needs in the resettlement. Figure 51 shows the coding structure for the expectations and needs. Figure 52 shows the cognitive mapping of these factors and their sub-factors.

Name	Sources	Refere...
Expectations and requirements	5	19
Better land	4	7
Detached houses	3	7
Essential infrastructure	2	3
Needs quicker resettlement process	2	2

Figure 51: Coding structure of expectations needs of Arnhall villagers

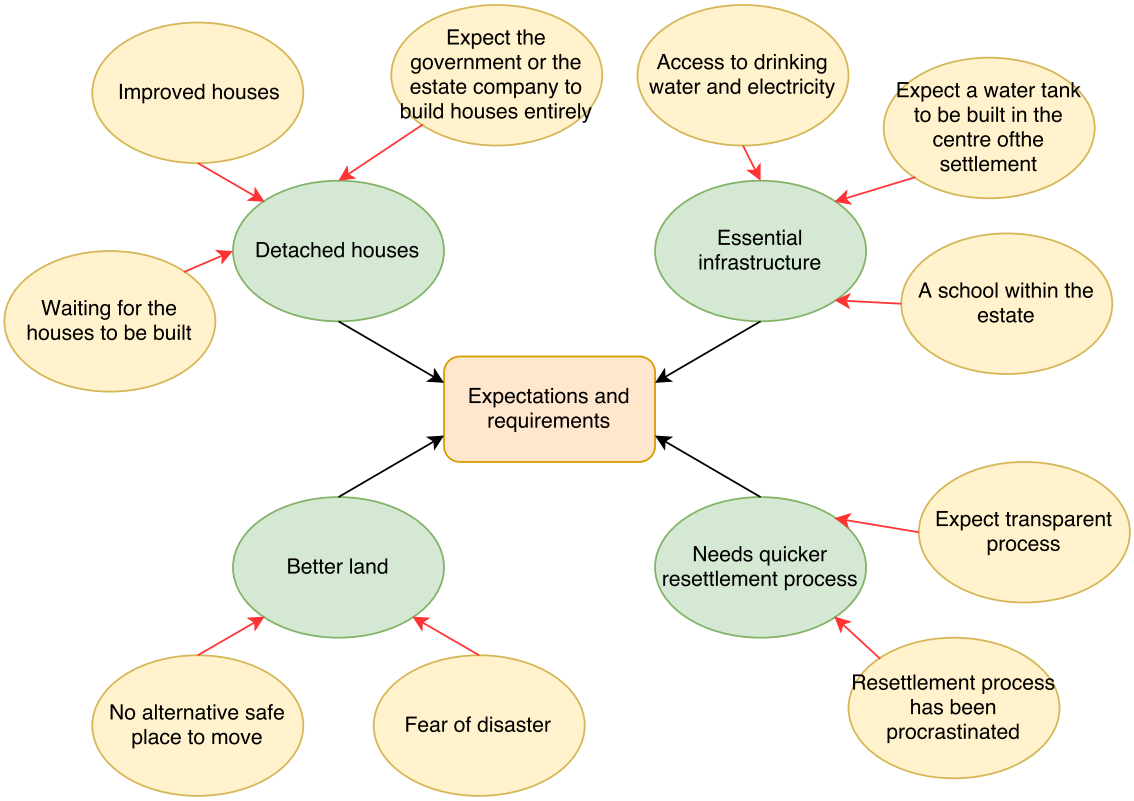


Figure 52: Cognitive mapping of expectations and needs of Arnhall villagers

Arnhall villagers still live in line-houses which were built in the period of British colonisation. Therefore, detached houses for each family is one of their most expected result from the resettlement. In the words of R31, *"People who live in the line-houses can live in detached houses after the resettlement."* This is an objective of any resettlement in the plantations. Responses show that the villagers realised the threat of a landslide. For example, R32 said, *"After Meeriyabedda landslide, some of the villagers evacuated this place out of fear."* However, the villagers, who still live in this village, have no safe alternative place to move. As noted by R36, though the plantation company agreed to provide financial support to build houses in the allotted land, most of the respondents (five out of six) were reluctant to accept it. The reason being that the villagers are daily-paid traditional tea plantation workers who belong to a disadvantaged group, lacking in resources to spend for potential budget overruns. Further, as explained in Section 6.5.2, the villagers were dissatisfied with the allotted land as it was close to a cemetery. Therefore, they expected the government or the plantation company to build houses at a different location. Another prohibitive reason was that some had invested most of their savings to improve their line-houses, which emotionally restricted them from leaving the houses. On the other hand, some of the villagers were willing to accept the allotted land and to build the houses, if assisted. For example, R36 said, *"If I get this money, I will build the a house. I am working, and*

can get a loan for further expenditure. Saying no to this offer will be foolish." This statement shows that some recipients with financial resources were agreeable to building a house with assistance. However, it was not the case with the majority.

Besides the houses, the respondents expected essential infrastructure at the location. R36 said, *"Soon after the resettlement scheme was announced, the first thing that we asked for was drinking water and electricity."* The respondents prioritised drinking water and electricity as the essential facilities and expected a water tank to be built at the centre of the settlement to meet the needs of all settlers. R31 expressed the wish, *"The relocation of the village school should be within the plantation to attract the children of the plantation workers"*. As the tea plantation was the central location for the plantation workers, location of the school within the plantation will make it convenient for the villagers to take their children to school.

Respondents expected a speedy resettlement process from the government. R32 said, *"Everyone is talking about a landslide. We do not know when it will happen. It will be good if we are resettled within a year."* The responses show that the resettlement process has dragged on by the limitations of both the authorities and the recipients. However, the respondents desired it to be quick and transparent.

6.6 Case 5: Queenstown

Queenstown is a tea plantation village in the Badulla District that was established in the 1900s, and now owned by an RPC. The village is mainly occupied by workers in the plantation, who still live in their ancestral line-houses owned by the RPC. Signs for landslide such as cracks in walls and bulges in floors were observed by the villagers in 2005 and 2011. Following investigations, NBRO declared the area as a landslide-prone zone. People have been advised to evacuate the village for safety. Materials for temporary shelters were provided for use during seasonal heavy rains. Negotiations were ongoing for housing construction for the families which live in the vulnerable part of the village. However, resettlement initiatives are yet to commence. The people of the community feel that this is because the RPC owns the houses and the government has limited control over it. The researcher further observed that some people still lived in the temporary shelters provided during the 2011 landslide. Data were collected from the villagers awaiting resettlement to explore their needs and expectations.

Favourable and unfavourable conditions of the resettlement were not identified for this case, as the villagers had not yet been offered a land or a house. Therefore, only the current procedures, expectations and needs in the resettlement programme are identified

for this case study. Five villagers expecting to be resettled were interviewed. Respondents have been anonymised and identified as R37 to R41 within the text.

6.6.1 Resettlement procedure

Signs of a landslide were observed by the villagers initially in 2005, and again in 2011. Soon after the 2011 incident, people were moved to a temple close to their location. R39 said, *"We were refuges in a temple soon after the incident. Later, officers from the local government asked us to move to a school and stay their temporarily."* According to four out of five participants, after a month's stay in the school they were asked to return to their former places as the school management wanted to reopen the school for educational activities. R41 said, *"We opposed leaving the school. But we were forced to leave. We had have nowhere else to go. So we returned here."* People were compelled to return to Queenstown, despite NBRO declaring the location to be in a landslide-prone zone. Alternatively, the villagers were given materials to put up temporary sheds at the same location. In the words of R38, *"Officers visited this place after we were forced to evacuate the school. They provided us materials to put up temporary sheds. I do not understand the point of erecting a temporary shed in the same location. Their argument is that if a landslide strikes it would cause less damage than permanent houses."* This statement shows that neither the government nor the RPC had an alternative site to resettle the villagers, and they remain exposed and vulnerable to disaster.

A compensation scheme was announced for villagers whose houses were damaged by land movement in 2011. Besides, the villagers were not forced to leave the location as they were not offered an alternative location. R38 said, *"Nobody officially asked us to leave this village. The government cannot be directly involved in this matter as the plantation company owns the land."* This statement implies that the line-houses occupied by the plantation workers were owned by the RPC. Thus, the RPC was to a considerable extent responsible for the resettlement of its workers, and the role of the government in resettling the villagers was limited. However, as a precaution, the villagers were asked to move to a safer ground during rainy season as vulnerability of the location to landslide is more in the wet seasons. The interviews reveal that the resettlement process had not commenced though they were promised to be resettled soon.

6.6.2 Expectations and needs

Expectation and needs of the Queenstown villagers in a potential resettlement were identified from the interviews. Figure 53 shows the coding structure of the expectations and needs, and Figure 54 the cognitive mapping for the factors and sub-factors.

Name	Sources	Refere...
Expectations and requirements	5	19
A location close to their livelihood and current location	4	8
Compensation for the damaged houses	4	7
Detached houses for all the villagers	3	4

Figure 53: Coding structure for expectations and needs of Queenstown villagers

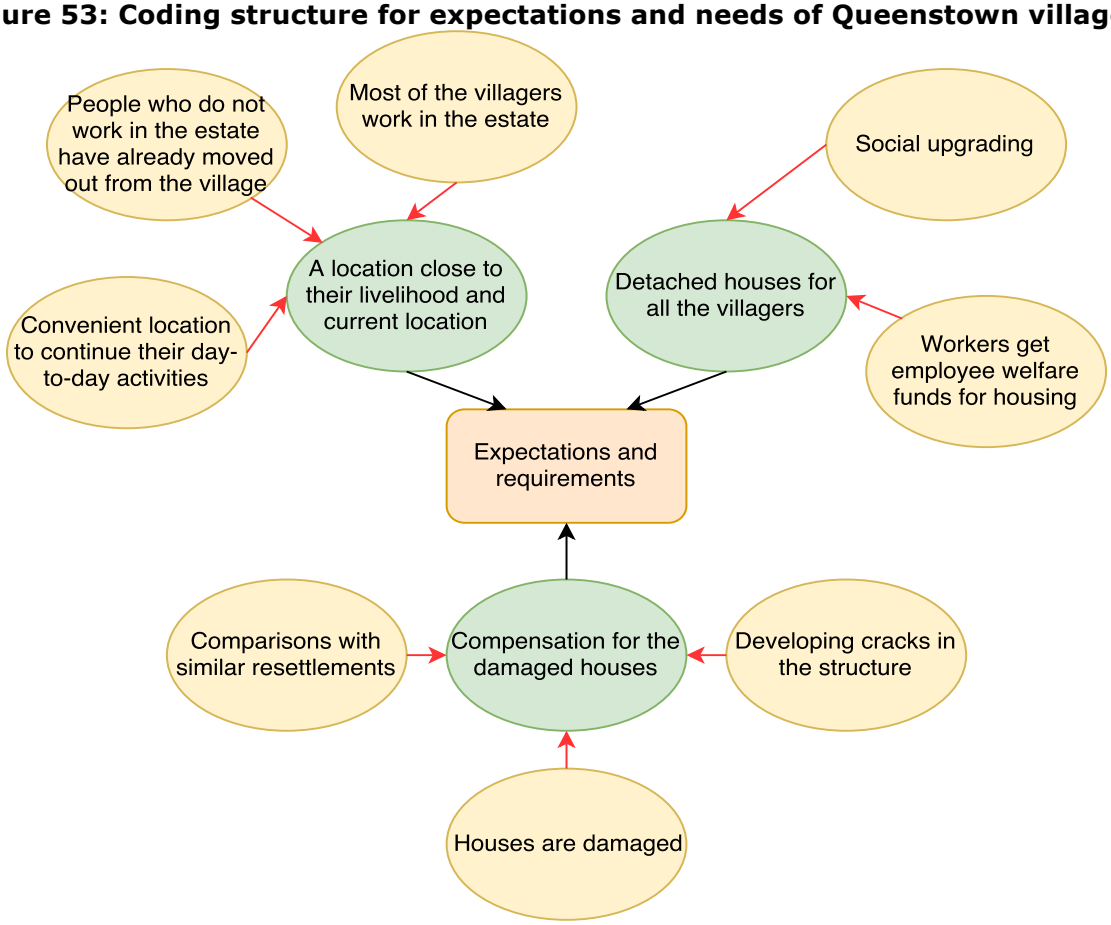


Figure 54: Cognitive mapping for expectations and needs of Queenstown villagers

All the respondents are aware that they were exposed to a disaster soon after confirmation by NBRO that the village was in a landslide-prone zone. In the words R38, *"We are worried. We need a safe location to live in peace."* However, the villagers did not have the money to find another safer place to live. Further, since most of them were traditional tea plantation workers living in the lands administrated by the plantation company, they expected another location within the plantation that was convenient for them to continue

working in the plantation. R38 endorsed it: *"There are five acres of land close to this location, owned by the plantation company. They are safer locations. We will erect a small hut and live there if we receive the land."* R37 added, "P*eople who do not work in the plantation have already moved out from the village. We work in this plantation, and we expect the management to make arrangements."* These views indicate the villagers' basic expectation is a location close to their current location and to their livelihood.

Besides a nearby location, the villagers expected detached houses for all. According to R41, the plantation management and the employees' trust were willing to offer financial assistance for houses for villagers employed in the plantation. R41 further noted, *"The plantation company expect the villagers' to contribute towards any possible budget overrun, and they can recover that amount form the worker's salary periodically. Thus, they are not ready to assist the villagers who do not work in the plantation".* R37 also agreed that the employee's welfare funds would be used for housing schemes. However, retired workers and other villagers who live in the line-houses ancestrally but do not work for the plantation, were not included in the housing scheme. The villagers, however, expect resettlement for all who live in the vulnerable part of the village, irrespective of their employment status.

Compensation for the damaged houses is another expectation of the villagers, for use to develop the resettlement houses. Four of the five respondents have complained that land movement damaged their houses. For example, R40 noted that, *"We observed wall cracks that developed since 2005. In 2011 our house collapsed. We repaired it and are living there now. But cracks continue to develop".* R37 added, *"People from another village got compensation for the houses that they lost."* This shows that the villagers compare themselves with similar resettlements and expect compensations for their damaged houses, for development work in the resettlement.

6.7 Case 6: Makaldeniya

A massive landslide, which was triggered in Koslanda, Meeriyabedda Estate on October 2014, destroyed around 70 line-houses and left 275 people homeless (Wimaladasa, Prasanna, Rathnasiri, & Maduranga, 2016). Soon after the landslide, a resettlement programme was initiated by the Government of Sri Lanka to construct 75 housing units. The programme was implemented by the DS, Badulla in collaboration with UDA, Sri Lanka Army, Ministry of Disaster Management, and NBRO. Ministry of Plantation Industries was responsible for resettlement site selection, in consultation with Ministry of Livestock and Rural Community Development and NBRO (Rathnasiri, 2016). Landslide victims opposed the initial selection of land, and another land was selected in the Makaldeniya Division. An

old tea factory in Makanda Estate was restored to house the victims temporarily. Housing construction for resettlement was in its final stages at the time of data collection. Houses have now been handed over to the victims.

Each settler received seven perches (0.0177 ha) of land with a single-unit house. Electricity, water, and road facilities are provided. Ministry of Estate Infrastructure Development agreed to fund for the erection of an elephant fence in collaboration with Department of Wildlife. The resettlement site has access to markets, play area, religious places, schools, and medical centres.

The principal researcher interviewed seven victims in the Makanda tea factory to explore their experience in the resettlement process. Respondents have been anonymised and identified as R42 to R48 within the text.

6.7.1 Favourable conditions

At the time of data collection (20.06.2016), the new houses were near completion. The interviewees expressed the favourable conditions in the new location as well reflected on the unfavourable conditions in the temporary shelter that motivated them to resettle. Figure 55 shows the coding structure for the favourable conditions, and Figure 56 shows the cognitive mapping for the factors and sub-factors.

Name	Sources	Refere...
Favourable conditions	7	25
Better location	6	8
Unfavourable conditions in the temporary shelter	5	12
Access to infrastructure facilities	2	5

Figure 55: Coding structure for favourable conditions in the Makaldeniya resettlement

According to the respondents, unfavourable conditions in the temporary shelter constituted the primary motivation for resettlement. The victims had lived in the temporary shelter for almost two years with inadequate facilities. R42 said, *"We are in this temporary shelter for about two years. The resettlement process has hopelessly dragged on from all the four corners."* Respondents referred to issues of privacy, hygiene and water scarcity as the recurring problems in the old tea factory where they were temporarily housed. R45 said, *"Every family was given a small room. Four members of my family have to cook, study and sleep in that room. Privacy is a big problem, especially for the families with young girls."* R45 further added, *"We have access to water. But, we experience trouble in collecting water during dry season."* R43 added further: *"95 families live here. The common toilets which were erected to meet our needs are inadequate. We face hygiene-related issues."* These statements imply that the landslide-affected victims suffered consequences

of inadequacies of essential facilities in their temporary shelter. These unfavourable conditions experienced in the temporary shelter acted as pulling factors that persuaded them to resettle.

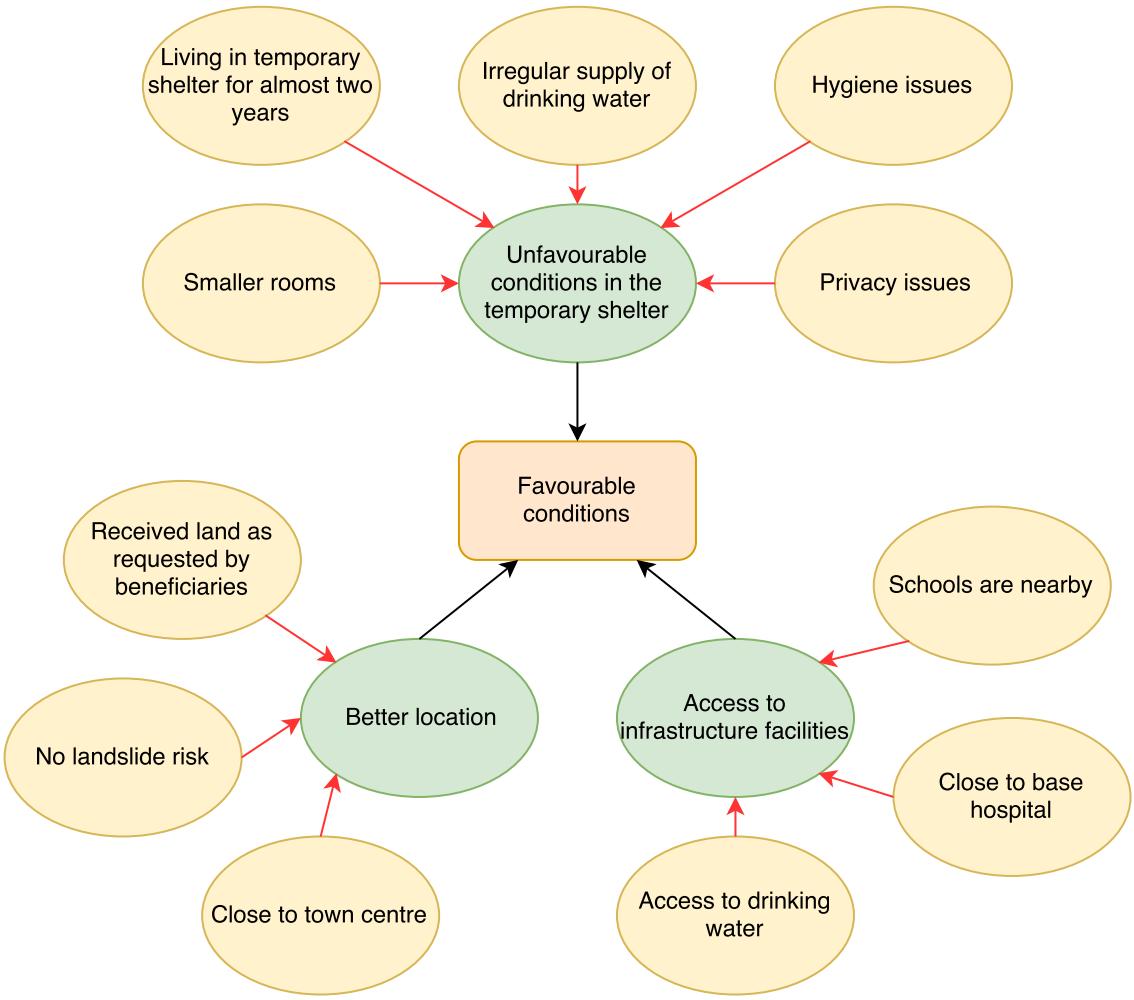


Figure 56: Cognitive mapping for favourable conditions in the Makaldeniya resettlement

Besides unfavourable conditions in the temporary shelter, four out of seven respondents said that the location of the new houses is better than their former landslide-affected location. In the words of R43, *"Where they are building the new houses is in a good environment. That place has no disaster risk."* R44 added, *"The new location is a good land. We like to go and live there."* The respondents refer the new location as 'good' compared to the earlier proposed land for resettlement which the beneficiaries were opposed to. R48 said, *"The previous government allocated a land for resettlement and laid the foundations for housing. That land was unsuitable for housing construction. It is a highland, and poses difficulties in getting water and transport. So we opposed it."* Meantime there was a change of government after the elections of 2015, and the Minister for

Plantation Industries was changed. As a result of people's opposition and the change of government, the present land was allotted for the resettlement. Respondents expressed satisfaction about the allotted land and referred to it as a favourable condition.

Respondents noted access to social and physical infrastructure as another favourable condition for the resettlement. R47 said, *"There is a school which is half a kilometre away which primary school children can attend. High school students also have schools around."* R48 also agreed with this and expressed similar statement. R47 added that the base hospital and Koslanda town centre are close to the location, and within 5 km radius. The respondents also mentioned that the Diyaluma waterfall is close to the location and is an uninterrupted source of good drinking water. Also, electricity, transport and elephant fences are among infrastructure facilities that are expected to be provided.

6.7.2 Unfavourable conditions

Though the victims eagerly await resettlement, the respondents also identified some potential unfavourable conditions that may affect the longevity of the resettlement. Figure 57 shows the coding structure for the unfavourable conditions, and Figure 58 the cognitive mapping for the factors and sub-factors.

Name	Sources	Refere...
Unfavourable conditions	3	8
Doubts that the land plot size is lesser than the promised size	2	2
Inadequate land size	2	3
Houses are close to each other	1	1
Inadequate house size	1	2

Figure 57: Coding structure for unfavourable conditions in the Makaldeniya resettlement

The officials-in-charge promised plots of seven perches (0.0177 ha) per beneficiary in the resettlement. However, R46 and R48 suspected that the plot size was lesser than what was promised. R48 said, *"Boundaries between houses were not marked. After distributing the houses, it might give rise to problems when people try to define boundaries. I feel that it is not seven perches. It seems less."* Though R46 and R48 felt that the allotted land plot was less than the promised, their suspicion was not established during the study period. However, all respondents agreed that the boundaries were not defined and demarked between houses, and as noted by some respondents, it could lead to problems in the future.

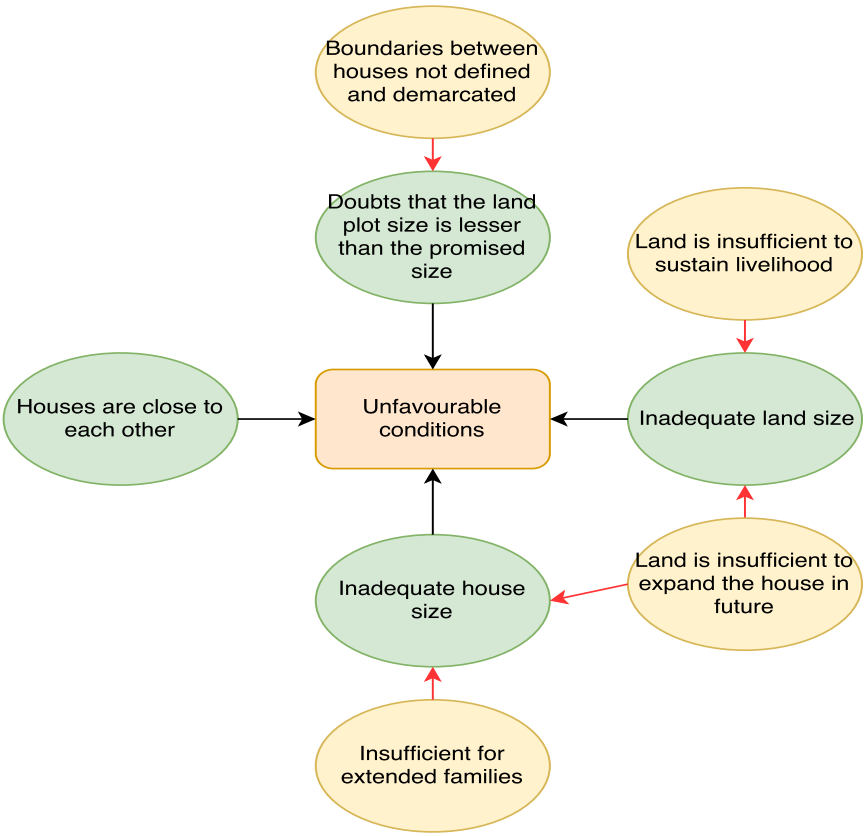


Figure 58: Cognitive mapping for unfavourable conditions in the Makaldeniya resettlement

Another concern of the respondents concerned the inadequacy of the extent of land offered. R47 said, *"Our former location used to be a 'milk village'. Our economy did not depend entirely on the plantation. We used to raise cows and sell milk for additional income. Now they are giving only seven perches of land. It is insufficient to raise cows."* R48 added, *"Home gardening and animal husbandry are some of the self-employment opportunities we used to have. We might not be able to continue them in the new location."* These statements show that the villagers expect a resettlement that supports continuation of their means of livelihood. Further, the respondents complained that the houses were too close to each other, which restricts prospects for future expansion. In the words of R46, *"Our family is big, and the land space is insufficient to put up an additional room."* This statement further emphasises the inadequacy of the land space which is promised.

'One size fits all' policy is one of the common approaches in most of the resettlement housing projects. Economics of scale, quicker construction and better management are among reasons that justify this approach (Thiruppugazh, 2016). However, respondents view this as an unfavourable condition. In the words of R46, *"A 10 feet x 10 feet hall, an 8 feet x 8 feet room, a small kitchen, and a bathroom are sufficient for a small family. Our family has eight members. The house is not sufficient for my family."* As noted in the earlier

paragraph, the land is insufficient to expand or customise the houses according to individual preferences. As the victims had still not moved to the new location, no other built-environment related or socio-economic related unfavourable conditions were identified.

6.7.3 Resettlement procedure

Signs of a landslide were first noticed by the villagers of Meeriyabedda in 2004. Subsequently, part of the village was identified to be in a landslide-prone zone. According to R46, *"A land offer was made to 63 families for resettlement. However, the offer was withdrawn for some reason."* R42 endorsed this stating, *"After the signs of 2004, there were plans to provide lands for the people who work in the plantation."* However, that plan never materialised. Again in 2011, people noticed signs of a landslide, which too was not adequately addressed according to the respondents. Finally, a landslide struck in the village in 2014.

Around 70 houses were destroyed in the massive landslide in Meeriyabedda. Victims were temporarily housed in a school, and their immediate needs were attended by government officials with timely assistance of neighbourhood communities and several charity organisations. R47 said, *"The incident occurred around 7.30 am. Around 2.00 pm all the victims were asked to move temporarily to the neighbourhood school."* The school was inadequate to accommodate all victims, and daily educational activities there were disrupted since the victims occupied the classrooms. As a result, the government commenced resettlement initiatives after two months, and an old tea factory was refurbished to house the victims during the period of construction of houses for resettlement. Food ration, water, electricity, and toilet facilities were provided in the temporary shelter.

As the beneficiaries rejected the initially proposed location for resettlement, because of its unsuitability for habitation, another more acceptable location was selected for housing construction, which, as discussed in Section 6.7.1, was mentioned as a favourable condition by the respondents. During the period of data collection ending 20.06.2016, 61 housing units were completed and 14 units were under construction. According to the respondents, the information given to them about the houses to be built was rather abstract. R45 said, *"A house plan was shown to us. But we were not given any options, and they did not seek our opinions on the design."* R48 added, *"The plan was shown on a laptop screen. Only four or five people could to see it properly. I did not get an idea of the design of the house, based on that".* These statements show that though attempt was

made to involve people in the process of resettlement, the way it was implemented was ineffective. Also, the beneficiaries were not consulted on the suitability of the houses.

It was evident from the responses that the lack of transparency in beneficiary selection caused disputes among victims. Five out of seven respondents were unclear about the beneficiary allocation procedure. According to the records, 70 houses were destroyed by the landslide, and the government was building 75 houses. However, 91 families registered as victims were living in the temporary shelter. R45 said, *"In some cases, two families which lived in the same house, registered separately in order to get an additional house. Some families who were not living in the affected location had registered as victims in order to get a house."* This indicates that there was no beneficiary selection process since the number of new houses built exceeded the number destroyed. However, the number of people claiming new houses had increased unexpectedly. The respondents do not know how this dispute will be resolved. According to R47, some degree of corruption was also involved in this matter, as some officers wanted to show a larger number of victims to attract more aid funding.

Livelihood restoration facilities promised to be developed as a part of the resettlement process. R46 said, *"Officials said that they will build a temple, a milk collection centre, and a primary school."* However, the responses indicate that these facilities were not being built, and may take a long time for implementation.

6.7.4 Expectations and needs

Expectation and needs concerning the new resettlement were identified from the interviews. Figure 59 shows the coding structure of the expectations and needs, and Figure 60 the cognitive mapping for the factors and sub-factors.

Name	Sources	Refere...
Expectations and requirements	7	41
Adequate infrastructure facilities	6	14
Transparent resettlement procedure	6	12
Faster resettlement process	5	9
Livelihood restoration initiations	3	6

Figure 59: Coding structure for expectation and needs in the Makaldeniya resettlement

The initial expectation of the respondents was a speedy resettlement process. The victims had lived in temporary shelters for almost two years. Owing to the unfavourable conditions that they faced in the temporary shelter, they expected to be resettled early. R43 said, *"At the beginning, it was promised that the housing construction would be completed within 100 days. However, it has dragged on for two years. The houses are in their finishing stage now. We hope that we will be resettled in another two months."* Further, R42, R44, and

R45 emphasised that they expect houses as soon as possible. In the words of R45, *"We have informed the media of our concerns. We cannot go on living in this temporary shelter. We need the houses as soon as possible."* R44 further added, *"I cannot wait to go and live in the new house. Also, it is a good area with many facilities".* These statements clearly show that the beneficiaries were keen to resettle in the new location because of the favourable conditions in the new location as well as the unfavourable conditions in the temporary shelter. The reasons for the delay in construction, as noted by R47 and R48, are the change of government, lack of raw materials, delays in clearing the land, and corruption.

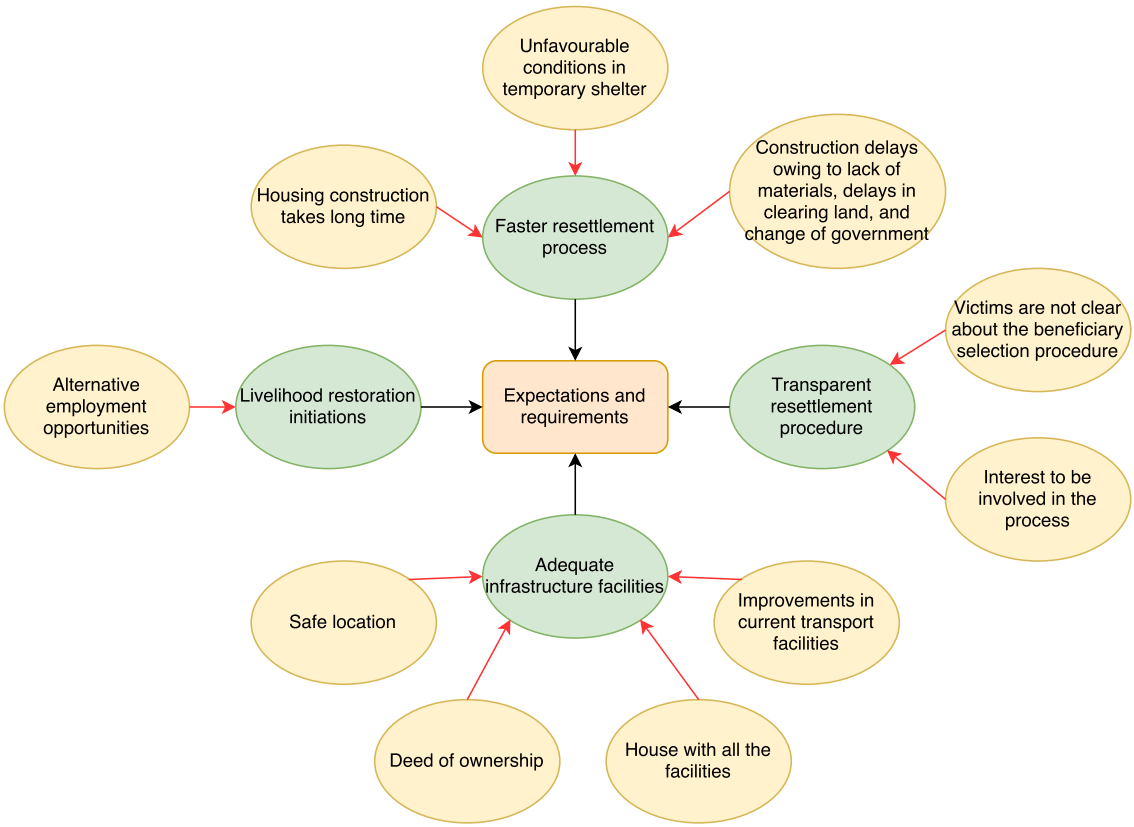


Figure 60: Cognitive mapping of expectation and needs in the Makaldeniya resettlement

Another expectation of the respondents was a transparent resettlement procedure. As discussed in Section 6.7.3, the victims were unclear about the beneficiary selection procedure since the families wanting houses exceeded the actual number of houses that were being built. All the seven respondents expressed concern about not receiving a house and explained why they deserved a house. R46 said, *"I heard that they are going to select the beneficiaries randomly. It is unfair by the victims. They have to study each case before distributing the houses."* R42, R45, and R48 confirmed that there are families who were

not affected by the landslide residing in the temporary shelter, just for the sake of getting a house. In the words R48, *"Houses are being built for all the victims. But the problem is that the number of families claiming the houses has increased. For example, two brothers who earlier lived in one house with their families are now claiming two houses."* To solve this problem, the respondents expect the government to follow a fair procedure that is transparent to all victims. Respondents also expected to be consulted on their housing needs. R48 added, *"Housing construction was completely planned and executed solely by the government. It has not informed the people of its plans or discussed them with the people."* R43 and R45 expressed similar views and indicated interest in being involved in the process.

Respondents expected the location and houses to be provided with adequate infrastructure. R47 said, *"There is only one bus running on that road. After the resettlement that area will be populated and I expect the government to provide a better bus service along that road."* Further, they expected the deed of ownership to be made available at the earliest possible. According to the respondents, the houses are smaller than what they had, and they need ownership deeds to make modifications in the house. R46 said, *"The size of the house is insufficient for an extended family. We need the deed to build an extra room."*

In addition to the expectations and needs stated above, the respondents expected initiatives for livelihood restoration and opportunities for alternative employment. The majority of the victims are traditional tea plantation workers are daily wage earners. So, they also herd cattle and grow vegetables for additional income. As the new location lacks sufficient land for such activities, they expected the government to provide means of livelihood restoration or alternative employment. R47 said, *"We cannot continue our livelihood in the new location. Also, our younger generation does not want to work in the tea plantations. Therefore, we expect the government to provide alternative employment opportunities."* This and similar views expressed by R46 and R48 show that the livelihood is one of the major concerns of the victims.

6.8 Case 7: Meeriyabedda

Meeriyabedda is a tea plantation village located in Badulla District, occupied mostly by the plantation workers who lived in line-houses owned by an RPC. As explained in Section 6.2.6, Meeriyabedda Estate experienced a massive landslide resulting in severe loss of lives and properties. Consequently, the area was declared as disaster-prone, and people were advised to evacuate. Further, the government disabled all physical infrastructure including electricity to persuade the people leave. A land was allocated for resettlement, and materials were provided for temporary shelters. However, the people still live in the part

of the village which was largely unaffected by the 2014 landslide. The government has made efforts to evacuate them to temporary shelters during heavy rains. As the disaster also destroyed the school in this area, an old bungalow is used for the educational purposes of the village. Negotiations are on for housing construction for the families living in the vulnerable part of this village. Data were collected from four villagers still residing in the village to explore their needs and expectations on resettlement. Respondents have been anonymised and identified as R49 to R52 within the text.

6.8.1 Resettlement procedure

This case is the counterpart of 'Case 6'. The new 'Makaldeniya' resettlement scheme is being built for the people who completely lost their houses in the 2014 landslide that destroyed half of the 'Meeriyabedda' village, where some of the villagers continue to reside despite its declaration as a 'landslide-prone area', restricting access to the village. According to R50, more than half of this village was destroyed by the landslide and the rest of the village is under threat.

Soon after the disaster, the villagers moved to a nearby school according to R49, R50, and R51. After three months, these villagers were moved to another school for about a month and a half. The 'Makaldeniya' housing scheme was subsequently commenced for the people who completely lost their houses and moved to a temporary shelter which is an old tea factory (see Case 6). The others were asked to stay in a safe place until another resettlement scheme was arranged for them. R49 said, *"We did not know where to go. So we returned to this village".* However, as the village was declared to be landslide-prone, the government encouraged them to evacuate. Affirming it, R50 said, *"Electricity supply has been disconnected from this village. Other facilities are also restricted to drive people out of this village."* R49 and R51 also expressed views endorsing the statement R50; and R51 added, *"The school in this village is also closed as it is in a landslide-prone zone."* These statements confirm government attempts to evacuate the people from the village. However, the villagers, who are traditional tea plantation workers, stay on as there is nowhere else to go.

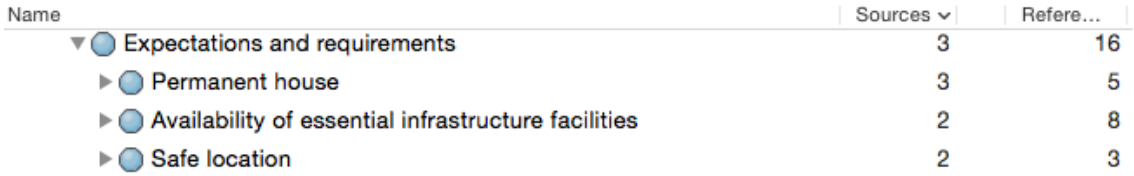
As a temporary solution, a land was allocated for the resettlement of the villagers. In the words of R50, *"A small land has been allocated, and 23 metal roofing sheets were provided. They expect us to erect a temporary shed and evacuate this place".* Though a land is allocated and materials to build a temporary shelter were provided, the villagers expressed reluctance to move. The respondents noted that the allotted land was a recently cleared woodland and lacked infrastructure facilities (e.g. toilets, electricity) to support human

habitation. As a result, the villagers refuse to move to the allocated land and still remain in the village.

Respondents said that they were expecting a resettlement programme from the government, at the earliest possible, as they have no other option to avert a future disaster. R49, R50, and R51 expressed views suggesting ignorance on the part of the government. For example, R51 said, *"We have informed higher officials as best as we could. But nobody comes over here to look at the situation".* The respondents also charged that beneficiary selection for the 'Makaldeniya' resettlement was processed in a biased manner. In the words of R52, *"Not all those who were moved to the old-tea factory had lost their houses in the landslide. Some of them were not affected at all, and they are given houses. But we are not".* These statements reflect the dissatisfaction of the villagers with the resettlement procedure.

6.8.2 Expectations and needs

Expectation and needs in the new resettlement were identified from the interviews. Figure 61 shows the coding structure of the expectations and needs, and Figure 62 shows the cognitive mapping for the factors and sub-factors.



Name	Sources	Refere...
Expectations and requirements	3	16
Permanent house	3	5
Availability of essential infrastructure facilities	2	8
Safe location	2	3

Figure 61: Coding structure for expectation and needs of Meeriyabedda villagers

The prime expectation of the residents of 'Meeriyabedda' village is a permanent house in a safe location. R50 said, *"We are living in a landslide-prone zone. We do not know when the next landslide will strike."* This statement confirmed that the villagers were staying on in the village fearing a landslide. Also, their earlier experience of a massive landslide aggravated the fear of disaster. R51 added, *"Elephant attacks and snake bite are daily issues in this area. The absence of electricity further worsens this problem. We need a safe location to live."* It is clear from this statement shows that the unfavourable conditions in the current location was a reason for the urgent need for a safe location.

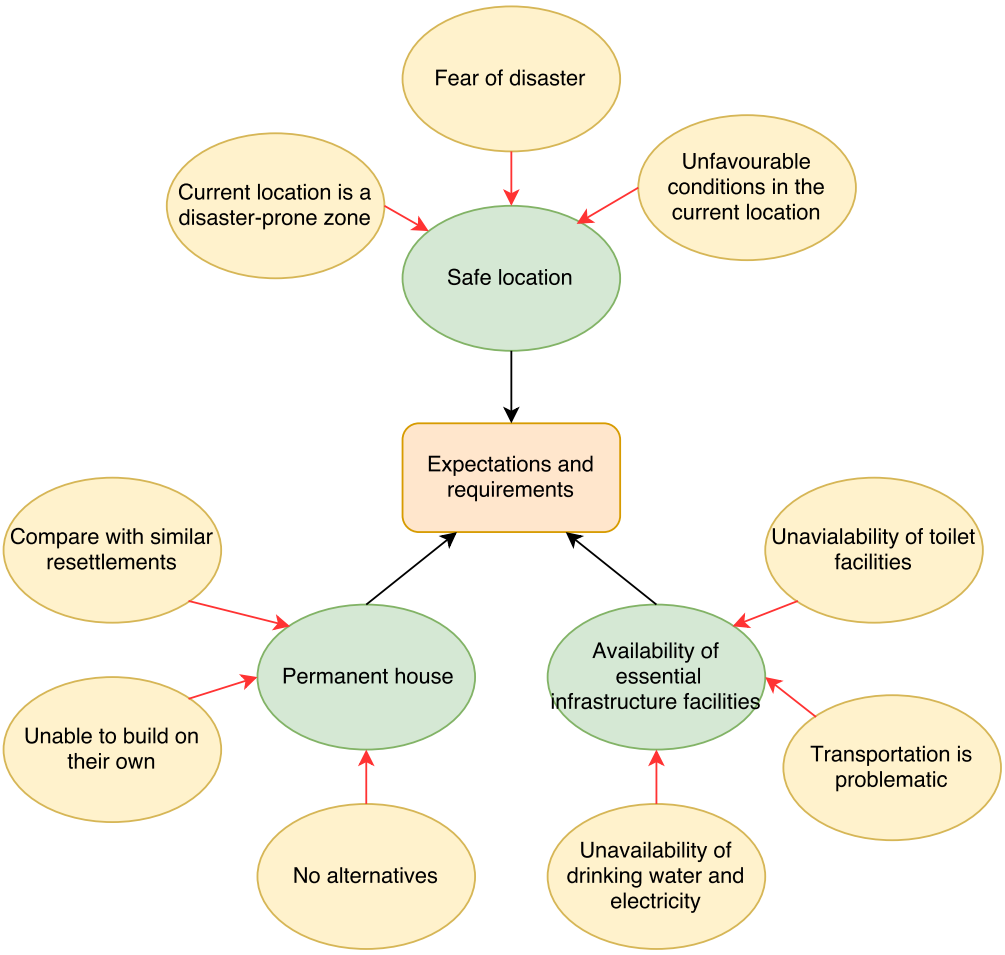


Figure 62: Cognitive mapping of expectation and needs of Meeriyabedda villagers

Though the villagers had been allotted a land, they also expect a permanent house to be built by the government, as they lacked the means to build one on their own. R51 said, *"It has been two years now. We have been waiting for a long time for a housing programme".* As discussed in Section 6.8.1, the government was seeking to evacuate the people from the village as it was declared to be landslide-prone. Regardless of such pressure, the people stay on in the village as they do not have an alternative. Further, people from the parts of the village that were severely affected by the landslide had already been granted a housing programme. Such circumstances raise their hopes for permanent housing. In the words of R49 *"Some of the villagers who were allocated new houses have houses here. We are in the same situation, and we expect the government to provide houses for us."* This statement shows that comparison with resettlement of people in similar situations also triggers expectations.

Another expectation widely expressed by the respondents is the provision of essential infrastructure. This too is a strong reason for the villagers not to move to the allotted land.

R49 and R50 complained that the allotted land has no toilet, electricity and water supply which are essential to start living in a location. Further, transport was also problematic in the allocated area. In the words of R52 "I*f we were offered a place with basic infrastructure, we will move immediately."* These statements affirm the villagers expect a resettlement programme with all essential infrastructure facilities.

6.9 Case 8: Newburgh

Newburgh is a tea plantation village in Ella in the Badulla District, occupied mainly by the plantation workers living in line-houses built during British colonial rule. In 2004, the village had indications of a landslide. Following that encounter, the area was declared as disaster-prone. According to NBRO, the Government of Sri Lanka, responded by getting the Ministry of Disaster Management and the Ministry of Estate Infrastructure Development to build 41 single-unit houses in the vicinity of the same plantation, but at a safer location. One of the objectives of this resettlement was to provide land ownership and single-unit houses to the plantation workers who had been marginalised by the society for centuries. Each beneficiary was given seven perches of land with a house. The houses were completed and handed over to the recipients. However, the community has not moved to the new houses yet, owing to inadequate infrastructure facilities, including water and electrical supply. The government promised to provide the infrastructure in due course. Data were collected from seven villagers who received the houses to explore their favourable conditions, unfavourable conditions, current procedures, and needs and expectations on resettlement. Respondents have been anonymised and identified as R53 to R59 within the text.

6.9.1 Favourable conditions

At the time of data collection (22.06.2016), the houses were officially handed over to the beneficiaries. However, the recipients were not moved to the new houses owing to some incompletions in the houses. Interviews revealed some of the favourable conditions in the new resettlement. Figure 63 shows the coding structure of the favourable conditions, and Figure 64 the cognitive mapping for the factors and sub-factors.

Name	Sources	Refere...
Favourable conditions	5	13
Permanent single-unit house	4	6
Recognition of occupancy	4	5
Availability of essential infrastructure	1	2

Figure 63: Coding structure for favourable conditions in the Newburgh resettlement

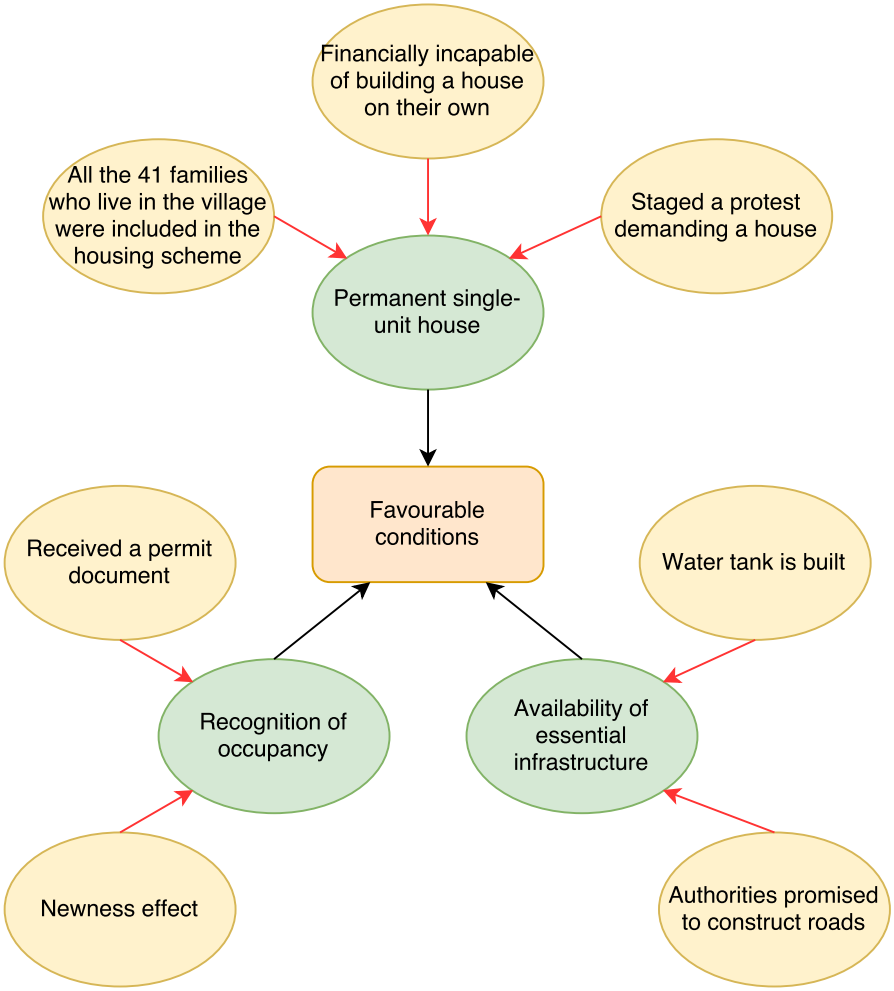


Figure 64: Cognitive mapping of favourable conditions in the Newburgh resettlement

The main favourable condition indicated by the respondents was a permanent single-unit house, which was provided to them. As the people living in the village are traditional tea plantation workers, who still live in their ancestral line-houses, a permanent detached house was a valuable asset to them. R56 said, *"We are a financially backward community. That is why we need the government or some charity organisation to build houses for us."* This statement confirms the financial incapability of the community to build a house on their own. R56 and R58 informed that the villagers therefore staged a protest demanding a resettlement scheme. R56 said, *"This area has been declared as a landslide-prone zone in 2004. We have waited for more than ten years for a housing scheme. In 2015, we staged a protest demanding a house, following which we were offered this housing scheme".* The respondents expressed satisfaction with receiving the houses. According to R54, all the 41 families from the village were included in the housing scheme.

In February 2016, the houses were officially handed over to the recipients, along with the keys, a permit document to accredit occupancy by the beneficiaries. Though accreditation of occupancy is not an ownership deed, it is considered as a recognition of possession by the villagers. According to R58*, "The line- houses that where we are now living is belong to the plantation company. We have now received a permit document for the new houses. It may not mean permanent ownership, but it recognises our occupancy."* Besides the permit document, the newness of the house was an attraction to some of the recipients. R58 said, *"Some people have kept their houses without improvements, in the same condition as when they were given by the British. The newness of the given houses received appeals to them as they are much better than their present houses."* R58 endorsed this statement and expressed a similar view.

Another favourable condition noted by the respondents was the water tank located within the settlement. In the words of R57, *"A common water tank has been installed within the resettlement. That could serve the whole settlement if it is connected to an appropriate water source."* Besides the water facility, the authorities had, according to R57, agreed to construct access roads, and provide electricity for the settlement. Availability of such essential infrastructure attracts the beneficiaries to the new resettlement.

6.9.2 Unfavourable conditions

At the time of data collection (22.06.2016), the villagers had not moved to the new houses as some of the infrastructure facilities (including electricity, access roads) were yet to be provided. Though the villagers had not moved to the new houses, the respondents identified some of the unfavourable conditions that could affect future occupancy. Figure 65 shows the coding structure for the unfavourable conditions, and Figure 66 shows the cognitive mapping for the factors and sub-factors.

Name	Sources	Refere...
Unfavourable conditions	7	89
Insufficient house size	7	29
Absence of essential infrastructure	6	18
Uneven land plot	6	23
Poor quality houses	6	10
Distance and transport	4	5
Time and budget of construction	4	4

Figure 65: Coding structure for unfavourable conditions in the Newburgh resettlement

Six out of seven respondents pointed out that the new houses are less spacious than their current line-houses. In the words of R53, *"They are detached houses, but less spacious than line-houses."* R54 added, *"Even the 200-year-old line-houses have bigger rooms than*

the new houses." The size of the house matters to the villagers as they fear that all the furniture they had in their line-houses will not fit into the new houses. A majority of the respondents were of the view that the new houses were not spacious enough to accommodate all their furniture. R58 added, *"I measured the cupboard that I have, and the entrance door of the given house. I cannot take it inside."* R55 and R57 made similar statements endorsing it. It thus seems that the main entrance to the houses are too small to move in large items of furniture. Also, in the view of R55, R56, and R59, insufficient space between houses aggravates the problem by restricting enlargement or modification of the houses. In the words of R56, *"The new house has only two rooms. My family has seven members. The house is not sufficient for us, and all of us cannot live there. Also, there is no space to expand the house".* This statement and a similar view expressed by R57 show that the houses are inappropriate or inadequate for extended families.

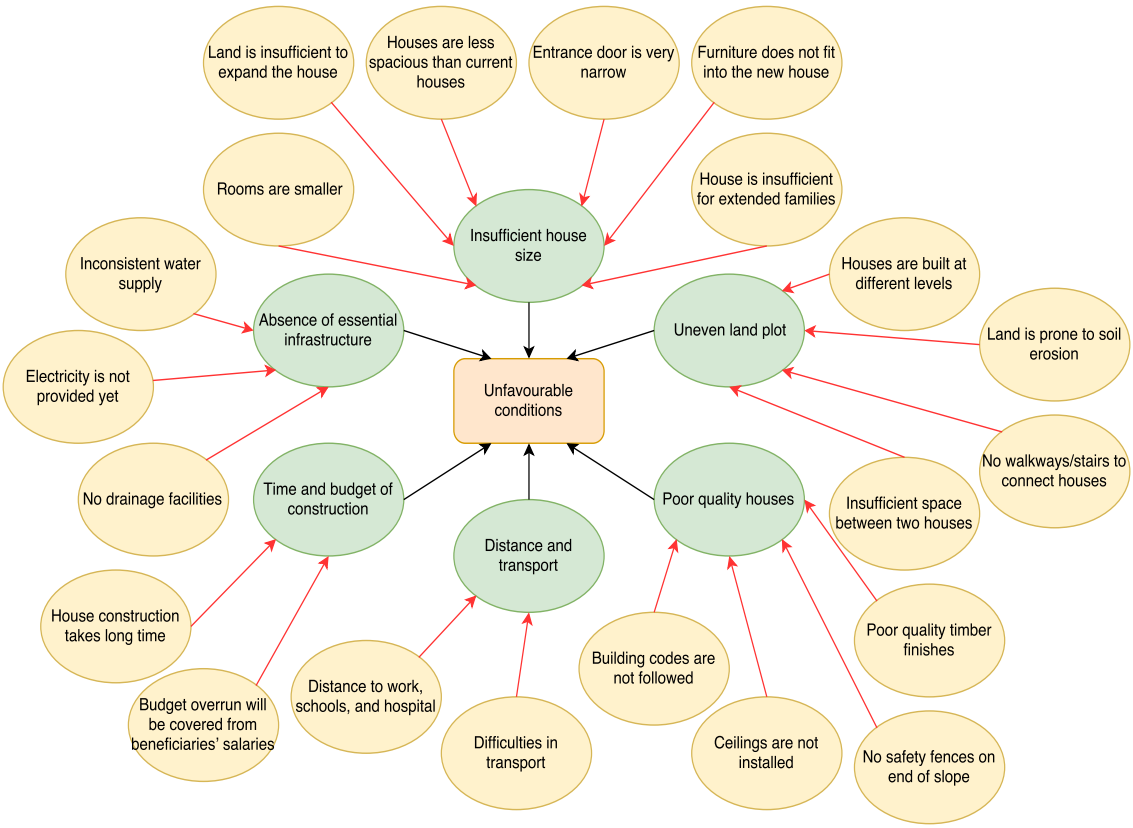


Figure 66: Cognitive mapping of unfavourable conditions in the Newburgh resettlement

Also, insufficiency of essential infrastructure was pointed to as an unfavourable condition by the respondents. Five out of seven respondents said that unavailability of electricity is the principal reason why they have not yet moved to the new houses. In addition to electricity, the continuous supply of drinking water is also stated as an issue. According to

R53, *"The water source connected to the water tank is available only in the rainy season. It will not be available in the dry season. They did not look for a permanent water source. They could have constructed dug a groundwater well".* This statement shows that access to drinking water is a concern of the respondents. According to R53, R54, R57, and R59, a drainage system also was not installed within the settlement. R53 said, *"No drainage facility is provided. We do not know how to dispose of waste water."* These are among infrastructure related unfavourable conditions mentioned by the respondents.

Another unfavourable condition pointed to by the respondents is the uneven levelling of the land. The resettlement is located on a sloping land. As observed by the principal researcher and stated by the respondents, the houses are not all at the same level. According to R56, *"Walking from one house to another house is difficult. Houses are not at the same level. One is at a higher level, and another is at a lower level."* Besides, according to R54, R57, R58, and R59, walkways and steps were not provided between the houses. The beneficiaries also feared difficulties in dividing the land among them as the land was uneven. According to R57, *"Houses have not been built at the same level. Therefore, it will be difficult to measure. Some beneficiaries will get bigger plots, and some will get smaller ones."* This statement shows that variation in the extent of land allocated is a concern for the beneficiaries. The recipients were further worried that since the houses are at different levels, the location could be prone to soil erosion during heavy rain. R53 said, *"During the rainy season, water from the high land will flow to lower lands along with the eroded sand, and houses at the lowest level will be the worst affected."* As noted by R59, this problem will be aggravated by vibrations that occur during excavation for foundations and sewage pits.

Use of poor quality construction materials is stated as another unfavourable condition. The quality of timber fittings was specifically criticised by many respondents. According to R58, *"Door sills are already attacked by weevils and are falling off. Even the locks do not work properly."* R56 endorsed this saying, "Timber fittings do not have basic quality." R58 said, *"As the houses are in different levels, vibrations could lead to defects in the houses."* R54 added, *"We have to do renovations before moving to the new houses."* These statements reflect the dissatisfaction of the recipients with the quality of the houses. Respondents also said that ceilings for the houses and the safety fences at the end of the slope have not been installed yet.

Other concerns expressed by the respondents are the time taken for completion and the budget overrun. According to R55, R56, and R57, Rs.400 will be deducted from the monthly salary for each of the 41 families, to cover the budget overrun. Respondents complained that house construction took longer than necessary. Further, the beneficiaries have been

informed that the allocated funding for the housing scheme is insufficient for completion of work and service installation. Respondents pointed to this inefficient fund management as an issue. The distance to schools, hospital, and workplace and transport difficulties were also identified as unfavourable conditions by the respondents.

6.9.3 Resettlement procedure

According to R56, Newburgh village was declared to be in a landslide-prone zone by the NBRO in 2004. R53 said, *"The village floods during heavy rain. Therefore, the authorities warn us to leave the village during the rainy season".* R54 added, *"We use nearby schools as temporary shelter during the rainy season".* These statements confirm that the villagers were aware that the village is landslide-prone and that they were advised to take precautionary steps during the rainy season. However, the respondents complained that the resettlement initiatives for this village has been unduly procrastinated. In the words of R56, *"From 2004, we have regularly requested housing arrangements. But we did not receive any solution. Finally, in 2015, we staged a protest demanding a resettlement programme."* Following the protest, the villagers were offered a housing programme. According to R53, one objective of the resettlement programme is the social up grading of the tea plantation workers. R53 said, *"At a press meeting, officials claimed that this is an attempt to change the line-house lifestyle of the hill country plantation-workers."* Previous cases also evidenced that the social up-gradation is one of the objectives of any estate resettlement in the plantations.

A new location close to their village was tested against landslide threat, and selected for resettlement. R57 said, *"The new site is tested for landslide safety. The officials say that it is safe."* The selected land belongs to the plantation company, in the view of R53, who added that *"The plantation company managed the housing construction in collaboration with the relevant ministries."* However, the villagers were not allowed at the construction site during construction. In the words of R58, *"I was not allowed to see the house which was being constructed for me. We asked at least our community leaders should be allowed to monitor the construction process and identify any issues."* Besides, R56 added, *"We were not consulted to express our expectations and needs. We also did not have any means to explain our issues to the authorities."* These statements show the interest of the beneficiaries to be involved in the resettlement process. However, their opinions were not adequately considered in the resettlement process.

Respondents noted that the housing construction was completed within a year. The houses were officially handed over to the beneficiaries in February 2016, according to R56, R57, and R58. But, owing to incomplete service installation, the villagers had not moved to the

new houses at the time of data collection (22.06.2016). According to R53, the physical infrastructure was not planned for the resettlement programme, and the beneficiaries were asked to contribute to the fund for physical infrastructure. In the words of R56, *"Electricity is not yet provided. The plantation company says that the funds for service installation are insufficient to complete the task. They therefore want us to contribute to compensate their budget overrun."* The impression of the respondents is that the funds for housing construction were spent carelessly or managed badly.

As houses had been allocated to the villagers, they were asked to move to the new houses on completion of service installation. R55 said, *"We are allowed to take all our belongings from the line-houses, including furniture and fittings. The authorities may demolish these houses to prevent us from coming back."* However, three out of seven respondents complained that the house allocation procedure was not transparent to the beneficiaries. Further, they expected a house allocation procedure that was fair and transparent to all the recipients. All the beneficiaries were given a permit to accredit their occupancy of the house and not a deed of ownership. The permit disallows division or transfer of the allocated plot of land. R57 said, *"The permit places restrictions about dividing the land. It says nobody can own a divided portion of a plot."* The respondents felt that this hurts their sense of ownership of the new houses.

6.9.4 Expectations and needs

At the time of data collection (22.06.2016), the villagers expressed reluctance to move to the new houses in view of the many unfavourable conditions in the new resettlement, as indicated in Section 6.9.2. The results of the interview reveal some of their expectations of the resettlement programme as described therein. Figure 67 shows the coding structure of those expectations and needs, and Figure 68 the cognitive mapping for the factors and sub-factors.

Name	Sources	Refere...
Expectations and requirements	6	24
Do not give up the former house	6	15
Larger land plot	4	5
Livelihood restoration	1	2
Ownership of land	1	1
Transparent resettlement process	1	1

Figure 67: Coding structure for expectations and needs of the Newburgh villagers

The villagers were instructed to vacate their line-houses with all furniture and fittings and move to the new houses. However, interview results reveal that the villagers do not like to give up their present houses. According to R53:

> *"I spent around Rs. 10-15 lakhs on expanding and upgrading this line-house. I spent all my earnings in this house. Officials say that they are going to demolish these houses. At least they can let us use them as storerooms."*

R57 and R58 also claimed that they had spent much money to improve their line-houses, and do not like to give up the houses. Three of the seven respondents said that their present house is more convenient for them than the new houses. This points to dissatisfaction of the villagers with the new houses, and, as a result, their reluctance in vacate the present house.

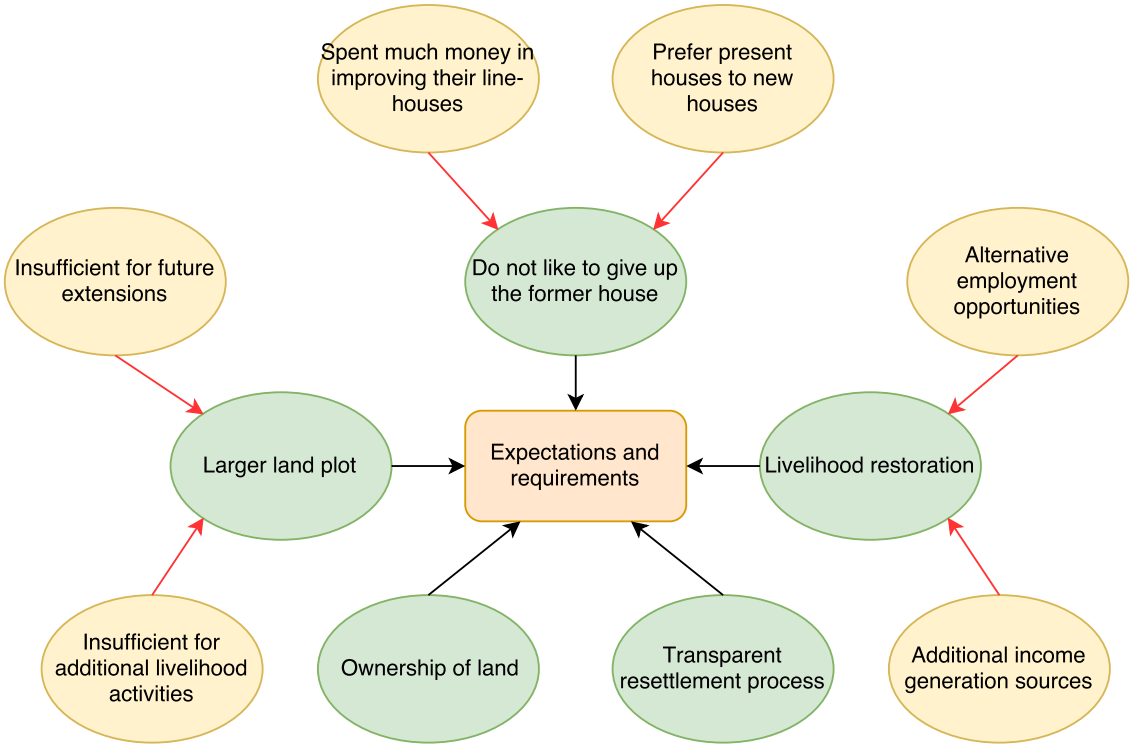


Figure 68: Cognitive mapping for expectations and needs of the Newburgh villagers

Another stated need of the respondents is a large plot of land. R54 said, *"The given house is insufficient for my extended family. The given plot of land is also insufficient for future expansion".* This statement shows that the respondents expect the plot of land to be big enough to allow future upgrading. Further, R53 said, *"We grow vegetables to generate additional income. We will not be able to continue that in the new location."* This shows that the resettlement will adversely affect the additional livelihood activities on which the

beneficiaries depend. Thus, the villagers want additional land allocation to continue their livelihood activities.

Respondents also expect the government to take steps to provide restoration of livelihood or alternative employment. As said in the previous paragraph, the new location and the allocated land plot is insufficient for their additional income generation activities. According to R53, *"Everybody who lives in this village does not work in the plantation. Seven perches (0.01777 ha) of land is insufficient for any other livelihood activity. Thus, the government should provide alternative employment opportunities."* This statement indicates that socio-economic factors of the villagers were not taken into account in the resettlement programme.

Besides these factors, ownership of the houses was stated expectation of the respondents. Since the line-houses where the villagers live were owned by the plantation companies, ownership of a detached house was seen as a great asset by the villagers. R53 said, *"According to the permit, the ownership of the land is with the plantation company. So, we are not the owners. But we desire ownership of our houses."* The respondents further reflected that legal ownership of the house would give them a sense of belonging to the resettlement. Further, they expected a transparent, consultative, and a more procedural resettlement process from the government.

6.10 Case 9: New Moor Street, Jaffna

The Muslim community of Jaffna was forcefully expelled from the District of Jaffna in 1990, as part an ethnic cleansing activity during the civil war. The expelled community lived in a temporary shelter for more than 25 years without much facilities. After the end of civil war in 2009, the displaced people were given houses and resettled again in Jaffna with assistance from several NGOs. Under the scheme, 48 new houses were provided for the affected community. Unlike in other cases discussed earlier, this resettlement was entirely voluntary and resettlement, after prolonged displacement, was in their original location. The dynamics of the area is considered to have changed after more than quarter a century of displacement, making it much like resettlement in a new location.

Houses were built under a housing project in the lands owned by the beneficiaries. Electricity and drinking water facilities were provided. The principal occupations of community in this resettlement was small business, metal work, and casual labour.

Two members from the resettled community and four members from the host community stated their views on factors that attracted the returnees to a built-environment and factors that repelled them, the resettlement procedures that they underwent, and their expectations and needs in the resettlement programme. Anonymised resettled community

respondents referred to as R60 to R61, and anonymised host community respondents referred to as H9 to H12 within the text. The sample size is small for this case as there was unanimity in the responses of each group.

6.10.1 Favourable conditions

This is one of the cases with host community involvement. Hence, the favourable conditions of the host community in a post-resettlement context are also reported in this section, along with favourable conditions of the resettled community. Figure 69 shows the coding structure of the favourable conditions and Figure 70 the cognitive mapping for the factors and sub-factors.

Name	Sources	Refere...
Favourable conditions	6	43
Host community	4	23
Having another community in the proximity	4	18
Essential physical infrastructure	3	5
Resettled community	3	20
Essential physical infrastructure	2	3
Having another community in the proximity	2	4
Improvement in standard of living	2	4
Ownership of the land and a permanent house	2	4
Proximity to social infrastructure	1	5

Figure 69: Coding structure of favourable conditions of the New Moor Street community

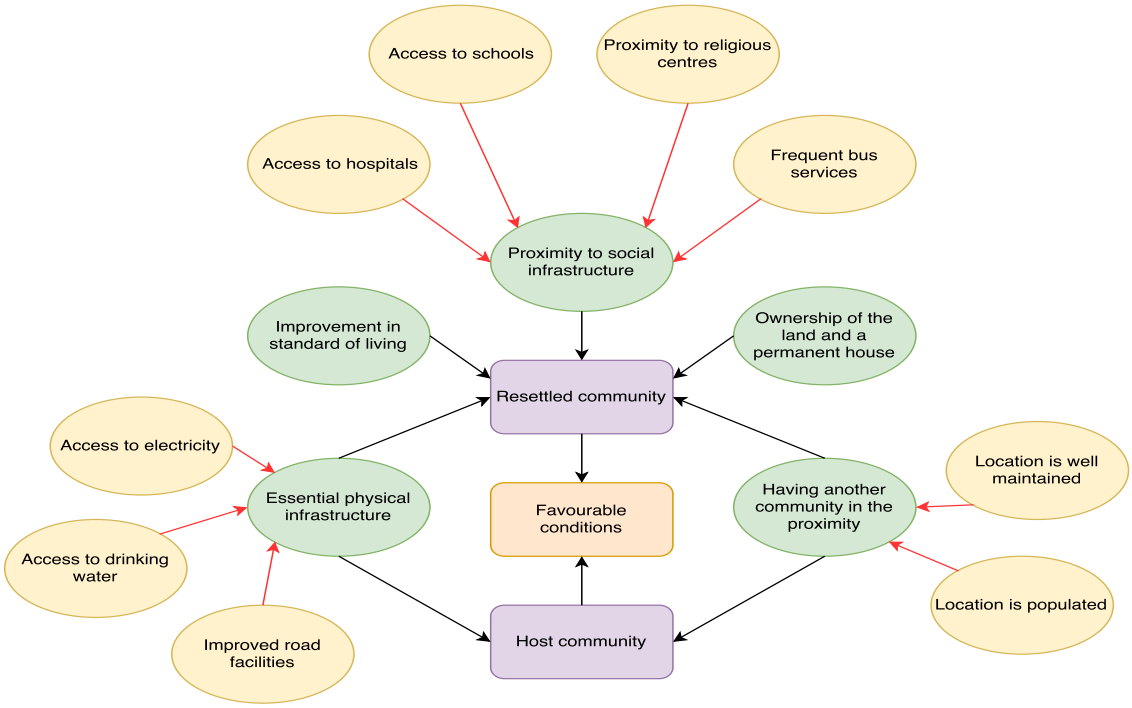


Figure 70: Cognitive mapping of favourable conditions of the New Moor Street community

The prime favourable condition stated by the resettled community is the availability of essential physical infrastructure. Among them, electricity and drinking water were received priority among the respondents. R61 said, *"We were provided electricity and drinking water supply, which are essentials."* The host community too identified electric supply as a favourable condition, which was not available before the resettlement. In the words of H9, *"We have electricity now, which we did not have earlier."* Besides electricity, the host community emphasised improvements to road and transport facilities following the resettlement. H9 said, *"The gravel roads have been upgraded to tar roads since resettlement."* These statements show that the communities prioritise essential physical infrastructure as a favourable condition that helps to adapt to the environment.

Proximity to social infrastructure including hospital, school, and religious centres also received priority to be favourable conditions that improve adaptability of the resettled community to the built-environment. R61 said, *"The Base Hospital is in town, and there is frequent bus service to the town. There are schools in the proximity. We also have a mosque close to my house, which is good."* This statement illustrates the attraction of access to social infrastructure to a resettled community. The resettled community also observed that their standard of living is better in the new location than where they were before. R60 said, *"We were living in a temporary shelter for more than 25 years. Now we have received new houses and our standard of living has improved now."* After prolonged displacement, the resettled community sensed a better life in the new location.

Another favourable condition noted by both communities is having another community in the proximity. The resettled communities liked to be resettled among another community, while the host community expressed satisfaction about the population increase in the location. H9 said:

> *"it is good to have people around. The land around here was not properly maintained before the resettlement. Therefore, we had issues with mosquito breeding in the unattended land. Now it is all well maintained, and the mosquito problem also has reduced."*

Further, the host community respondents said that the location has improved since resettlement. H12 said, *"This area was wiped out during the war, and was just bare land. It is good to see the land populated again."* These statements show that the the location remained unattended during the civil war. They also reflect the host community's appreciation of the new community for proper maintenance of the land.

Another favourable condition noted by the resettled community is the ownership of the land and a permanent house. R60 noted, *"We lived in a temporary shelter since childhood.*

Now we own a land and a house." According to the respondents, most of the resettled people have received houses in land owned by them. Therefore, returning to land owned by them was seen as a favourable condition by them. Further, according to R60, the settlers did not have the financial resources to build a new house on their land. Hence, the resettlement was seen as a welcome opportunity by the resettled community.

6.10.2 Unfavourable conditions

Though it is a voluntary resettlement, both the resettled and the host communities identified unfavourable conditions in adapting to the new built-environment. The unfavourable factors have been classified and discussed under two categories, namely built-environment related factors and other socio-economic factors. Figure 71 shows the coding structure for the unfavourable conditions, and Figure 72 the cognitive mapping for the factors and sub-factors.

Name	Sources	Refere...
Unfavourable conditions	6	53
Resettled community	2	26
Built-environemnt related factors	2	17
Incomplete houses	2	5
Climate adaptability of the houses	2	4
Inadequate size of the house	1	2
Inadequacy in maintaining essential physical infrastructure	2	6
Other socioeconomic factors	1	9
Decline in the standard of living	1	9
Host community	4	27
Built-environemnt related factors	4	18
Inadequacy of infrastructure	4	14
Changes in land-usage pattern	1	2
No improvements in social infrastructure	1	2
Other socioeconomic factors	3	9
Decline in income	2	4
Differences in political preferences	1	1
Changes in social behaviours	2	4

Figure 71: Coding structure for unfavourable conditions of the New Moor Street community

One of the main concerns expressed by the resettled community regarding the built-environment is the incomplete state of the houses. According to R60 and R61, the houses were handed over in an incomplete state to the beneficiaries. R60 said, *"We are most thankful for receiving a permanent house for free. However, to complete it we had to spend Rs. 300,000, which is unaffordable to us."* R61 added, *"We live in an incomplete house."* These statements point to the financial incapability of the beneficiaries to complete the houses. Therefore, they see incomplete houses as a barrier to adapt to the new environment. Responses further revealed that the unfinished state of the houses lead to several other issues that affect the normal activities of the occupants. R60 and R61 noted that rainwater seepage is an issue during rains. Moreover, the land gets flooded by heavy

rain. The respondents complained that lack financial resources to install appropriate damp-proofing to rectify the issue.

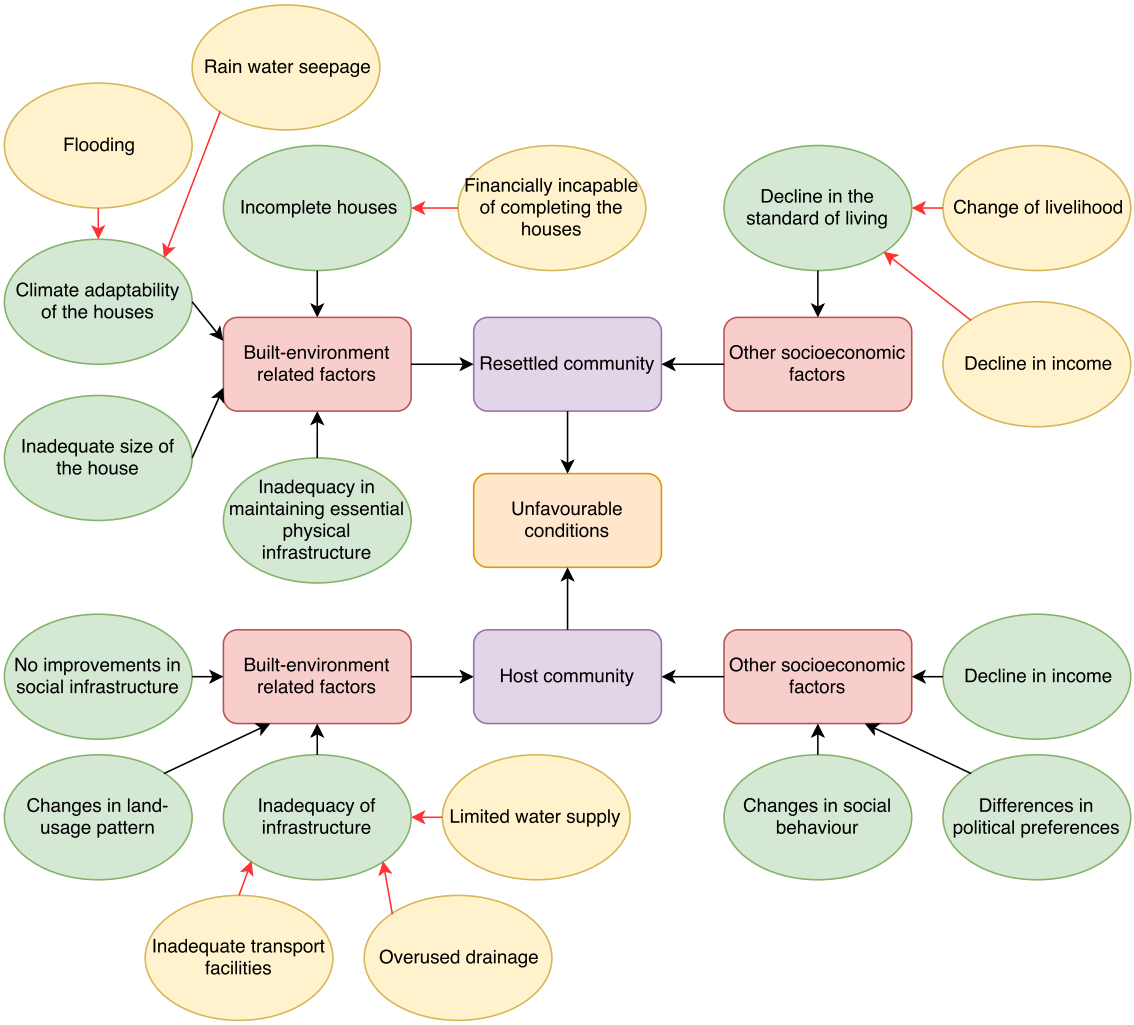


Figure 72: Cognitive mapping for unfavourable conditions of the New Moor Street community

The size of the house was identified as an unfavourable condition by the respondents. According to R61, *"We find it difficult to live within this space. It is insufficient for our family."* This statement indicates that the houses were too small for an extended family. However, only a core structure was provided for the beneficiaries under the housing scheme, and the recipients were expected to customise the houses according to their needs. But according to R61, they were financially incapable of expanding or upgrading the houses provided and considered the size of the house as an unfavourable condition for the respondents.

Shortcomings in maintaining essential physical infrastructure posed another built-environment related struggle to the respondents. It was said in Section 6.10.2, access to

drinking water and electricity were provided for the new location. But, respondents pointed to their inability to maintain those facilities. R61 said, *"We are provided electric connection and a meter with the resettlement. However, I cannot afford the cost of internal wiring. Therefore, we live without electricity. We also struggle to pay other utility bills."* The respondents also noted that the drainage system at the location was blocked owing to inadequate maintenance, and is the main cause of flooding during rains. These statements indicate that the economic capacity of the beneficiaries to maintain essential physical infrastructure was not taken in the resettlement plan.

In addition to these built-environment related issues, the respondents referred to some unfavourable socio-economic conditions in the new location. A major concern expressed by the resettled community is the decline in the standard of living. The respondents associated their lower standard of living with the reduction in their income. According to R61, *"Comparatively my income has declined very much. I lost my job and am unable to continue my business here. I had better opportunities in the previous location."* This statement shows that change of location can adversely impact the livelihood of communities. Socio-economic characteristics of specific locations do not allow some types of businesses as evident from this case. The respondents feel that their quality of living also declined owing to the fall in income.

Besides, the host community also pointed to unfavourable conditions affecting their adaptability to the built environment following the resettlement. An important factor mentioned by all the respondents of the host community was the inadequacy of infrastructure to meet the needs of both communities. H10 said, *"There is a common drinking water tap for some families. The water runs only for few hours. This creates problems every morning."* Besides inadequate water supply, transport was also a problem for the people living in this location. Public transport services have not improved in proportion to the rise in population, according to H11. H10 added that *"The drainage system is blocked and overflows owing to overuse."* These statements point to inadequacies in providing infrastructure and resources for sharing between the communities. This, if it continues to be inadequately managed, can lead to problems between the communities in the long run.

H10 noted that changes in land-usage pattern since resettlement has an impact on the pathways and the drainage system. When the resettlement site was a bare land, the host community freely used the land as pathway. Further, some of their drainage outlets ended on the empty land. After the resettlement, the pattern of interaction of the host community with the built environment suffered a negative change. Also, the respondents observed

that the social infrastructure, including schools and hospitals, has not developed in keeping with the rise in population.

The host community respondents, in addition to built-environment related factors, referred to some socioeconomic issues as well. A decline in income owing to increased competition, differences in political preferences and changes in social behaviour are among the most mentioned factors.

6.10.3 Resettlement procedure

According to R61, the resettled community lived in a temporary shelter for over 25 years. A government-owned, old rice mill building was converted into a temporary shelter, and essential facilities were provided to the displaced pollution. After the end of civil war, the displaced population were assisted by the government to resettle in their previous locations. R61 noted, *"The beneficiaries of the housing scheme were invited to attend a meeting with officials of the relevant authorities. However, neither the expectations of the community of the house design nor other aspects of resettlement were discussed."* This statement shows that the meeting was conducted to communicate information to the beneficiaries, and not to consult them.

According to R60, *"The house plan was finalised by the authorities without consultation. We asked to extend one side of the house, but they refused. All houses were built according to their plan."* This statement shows that the core house was built to a particular design for all beneficiaries. R61 added, *"The houses cannot be sold for ten years. Further, unoccupied houses will be taken back by the government."* This statement shows that, as in previous cases, the government imposes restrictions on property ownership. However, unlike in other cases, the beneficiaries have the ownership of the land. All the respondents said that the houses were incomplete when given and they were expected to customise the house according to their needs. However, R61 notes, *"The money which was allocated for the completion was inadequate."* Further, the respondents complained that the entire resettlement process suffered delays.

According to H10, the host community also received financial assistance for housing construction. In the words of H10, *"We received money from the resettlement programme. That money motivated us to invest more and build a better house."* This indicates that the financial assistance given to the host community enhanced their involvement in the resettlement process. Nevertheless, H12 noted, *"The host community was not informed or involved in the resettlement process".* This shows that, while the government attempted to create a sense of between the host and resettled communities by providing financial aid, it failed to involve the host community at any of the core resettlement stages.

6.10.4 Expectations and needs

The interview results revealed some of the expectations and needs in the resettled and the host communities in the resettlement programme. Figure 73 shows the coding structure of those expectations and needs, and Figure 74 the cognitive mapping for the factors and sub-factors.

Name	Sources	Refere...
Expectations and requirements	5	15
Resettled community	2	6
Prefer a host community	1	1
Allow changes in the plan	2	5
Host community	3	9
Upgrade existing infrastructure	3	6
Employment and commercial opportunities	2	3

Figure 73: Coding structure for expectations and needs of the New Moor Street community

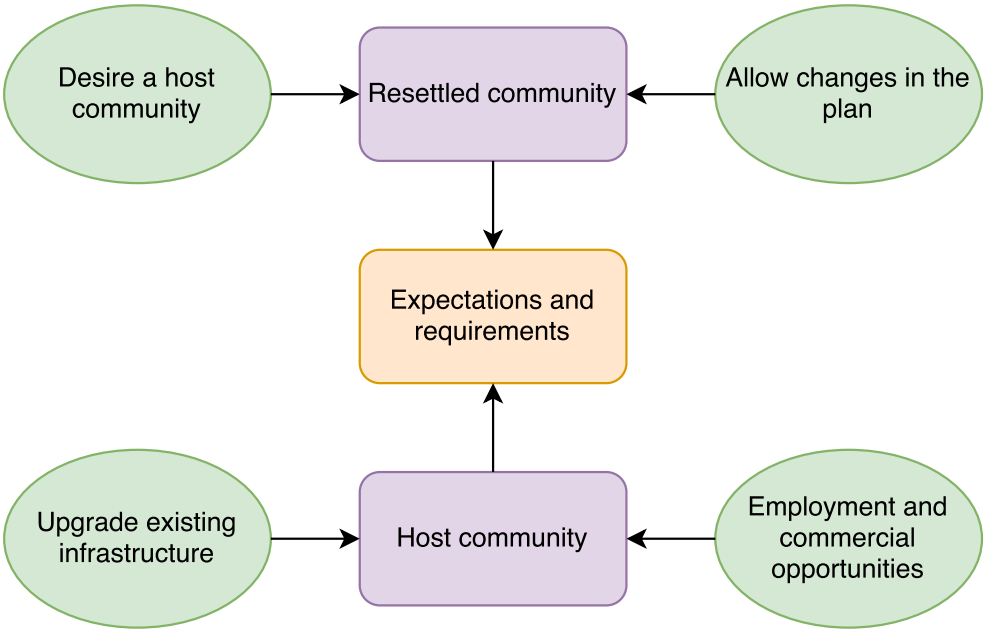


Figure 74: Cognitive mapping of expectations and needs of the New Moor Street community

The resettlement programme intended to provide a core house for the beneficiaries, and the initial expectation of the resettled community was that they will be able to make changes to the core plan of the house. According to R60, their request to make changes in the plan was denied. R61 said, *"The house is not up to my expectation. We were not allowed to make changes in the plan."* The respondents further noted that they expected a completed house rather than a core house. As discussed in Section 6.10.2, the beneficiaries lacked the financial resources to complete the house by themselves. Thus, a completed houses became their foremost expectation from the resettlement programme.

Resettlement among a host community was another need indicated by the resettled community. This need was already fulfilled by the government and the respondents expressed satisfaction. On the other hand, H9 notes, *"We expect more facilities to cater to both communities."* This is one of the primary needs stated by the host community. As described in Section 6.10.2, the host community suffered from inadequacy of social and physical infrastructure. Therefore, they expected the government to include plans to upgrade existing infrastructure facilities to cater to the two communities. Further, they expected improvements in the location in terms of employment and business opportunity.

6.11 Summary and link

Case study analysis is one of the principal analysis that addresses the objectives of this study. This chapter described the favourable conditions and unfavourable conditions in the resettlement, procedures followed, and the expectations and requirements on the resettlement of each selected case. A cross-case analysis is provided in the following chapter considering the length of this chapter.

Chapter 7 : Cross-case Analysis and Discussion

The analysis of nine selected cases individually was presented in Chapter 6 identifying favourable and unfavourable conditions of the resettlements, the procedures adapted, and the expectations and requirements of the beneficiaries in their resettlement. This chapter extends the scope of Chapter 6 to analyse the data across cases. The cross-case analysis is among five case-study analysis techniques which are widely adopted in multiple-case studies as explained by Yin (2014), who explains that a cross-case analysis serves to explore whether the cases studied replicate or contrast with each other. Thus, the analysis in this chapter is aimed at exploring possible theoretical generalisations and identifying common variables across cases.

7.1 Favourable conditions

Studies of human history have shown that human beings readily adapt to any environment compatible with their lifestyle or one where the necessary favourable conditions for resettlements can be created (Jigyasu & Upadhyay, 2016). Some conditions of a new environment are positive for all the human beings concerned while some are favourable only to a specific group of people (Lee, 1966). In Chapter 6, favourable conditions were identified for each case of resettlement expressed by the resettled communities. Among them are some factors broadly identified as favourable conditions by the communities, regardless of context and classification.

Table 30 shows the favourable conditions that have been identified by a majority in each of the cases (4 or more). It should be noted that Cases 5 and 7 are not included in the schedule since a new location for resettlement had not been allocated to these populations at the time of the survey.

Table 30: Favourable conditions across cases

Favourable conditions	**Cases**						
	1	**2**	**3**	**4**	**6**	**8**	**9**
Availability of drinking water	✓	✓	✓		✓	✓	✓
Availability of electricity	✓	✓	✓	✓			✓
Possession of a permanent house	✓	✓	✓			✓	✓
Proximity to school		✓	✓	✓	✓		✓
Populated location	✓	✓	✓	✓			✓

The results show that, irrespective of contextual shade, all post-disaster resettled communities valued access to basic amenities like drinking water and electricity at the location, as they were essential to well-being and an acceptable standard of living. The communities' prioritisation of basic amenities as a positive condition for resettlement, and the statements of the respondents as a whole affirm that the communities lived lacked or suffered inadequacy of these amenities before resettlement. Absence or inadequacy of infrastructure provisions including basic household amenities points to widespread poverty and/or poor standard of living (Kumar, 2015). Thus, adequate provision of these facilities attracts communities towards the resettlement, as it raises their standard of living. This finding supports the view of Cannon (2008), who argues that all disasters as 'socially constructed' since vulnerability to disaster is an outcome of poverty. Adding further support to this view, a majority of the communities identified the possession of a permanent house as a favourable condition. Findings of the interviews revealed that the communities who took residence in the post-disaster resettlements had earlier lived in temporary, semi-permanent, or line houses and were financially incapable of building a permanent house on their own. Thus, until receiving the resettlement houses, they had no alternative. Further, people of developing countries consider houses as highly valuable assets (Ahmed, 2011). Thus, possession of a permanent house was identified by the beneficiaries as a favourable condition that attracts the communities towards a resettlement.

Proximity to a school too was stated to be a favourable condition by a majority of the communities. According to Department of census and statistics (2017), 25% of Sri Lankan population represents the children aged between 5-19. Thus, approximately, one in four persons of the country is a child that attends school. Communities comprising the selected cases represented this demography, and expressed satisfaction about the availability of schools in their proximity. Besides, the school as a neighbourhood amenity provides easy access and thus has a positive effect on the value of the house (Sah, Conroy, & Narwold, 2016), making it a reason for proximity to a schools being identified as a favourable condition. Also, a populated location was identified as a positive factor by both resettled and host communities. According to Davies (2012), displaced communities usually prefer to live among or near a host community as it makes them feel physically, emotionally and spiritually safe. Findings of the present study concurrence with the views of Davies (2012), and also point to similar feelings of the host community. It should be noted, however, that the host communities' preference to live in a populated location does not imply willingness to host a new community.

The favourable conditions referred to above are common across the cases. Table 31 lists other context specific positive factors that emerged from the analysis.

Table 31: Context-specific favourable conditions

Favourable conditions	**Case**
Spacious and adequate extent of land and spacious house	1, 2 and 3
Financial assistance for housing development of host communities	3 and 9
Good relationship with the host community	3
The newness of the houses	8
Permit of occupancy (if certificate land ownership is not possible)	8
Availability of physical and social infrastructure	1, 2, 3 and 9
Unfavourable conditions of the present location	4 and 6
Safe location	2, 4 and 6
Land ownership	1 and 9
A location in the vicinity of the settlers' former location	1 and 4
Comparative improvement in housing	1
Proximity to town centre, place of worship, and main road	1 and 9
Land with fertile soil for cultivation	1

The findings above identify positive conditions that apply to given segments of society. For example, spacious houses and adequate extents of land were identified as favourable conditions by post-tsunami settlers. A plausible explanation for this is the massive inflow of post-tsunami aid and funds than in the case if other disasters. The tsunami caused massive devastation along 75% of the coastline of Sri Lanka. Jock (2006) notes that, as Sri Lanka is a popular tourist destination, this has attracted media coverage, and vast sums were collected for relief and rehabilitation works throughout Europe, North America and East Asia. Jock (2006) further states that, in addition to the funds, the foreign NGOs who arrived to the country with the intention to spend money were also involved in the planning and execution of housing construction in a competitive spirit. Therefore, the houses they built were relatively spacious, with adequate facilities. On the other hand, although landslides and conflicts attracted foreign funding, the funds available were not nearly as big as tsunami relief funds. Thus, the amount allocated per house was considerably less in their cases.

Further, in cases involving the presence of host community, financial support given to the host communities for housing development was stated as a positive factor. As noted earlier in Section 7.1, generally, the disaster-affected communities represented poorer segments of the society and, in the selected cases where the host community received support, the financial status of the host community was comparable to that of the resettled community. Thus, providing them with financial support housing construction enabled a degree of socioeconomic balance between communities. This is supported by Ager and Strang (2008), who established housing among means of successful integration between host and resettled communities. Generally, after resettlement, the resettled community draws attention to its special needs and vulnerabilities and receives necessary support. However, in the long term, the host community is bound to see this as a social unfairness towards them and complain against the privileges received by the resettled community but denied or unavailable to the host community (Duncan, 2005). Therefore, assistance provided with the aim of encouraging coexistence and cohesion was viewed as a positive condition by the communities.

Good relationship with the host community was identified as another favourable condition by resettled communities living with a host community. Despite Sri Lanka being a multi-ethnic, multi-linguistic and multi-cultural country, cultural and language barriers were not noticeable among communities in the resettlement. According to the interviews of Experts referred in Section 4.4.2, officials paid particular attention to avoid an excess of religious or linguistic mixing during the selection of locations. Therefore, discrimination relating to language and culture appears to have not arisen and not mentioned in any of the cases. Although livelihood, social behaviour and competition for resources are among factors that caused some unpleasantness among communities, overall, both host and resettled communities had a healthy relationship and stated it as a favourable condition for the resettlement. The present study has already demonstrated that the communities prefer to live in a populated location (see Table 30). Under the conditions, providing the ambience for community integration would enhance adapting to a place.

Recently resettled communities identify newness of the houses as a positive factor for resettlement. Such sense of value is relative and psychological. The study by Dinnin (2009) showed that soon after possession, when a customer senses the newness of a product, the customer is psychologically driven to assign a certain level of additional value. Accordingly, the findings show that the communities, which only recently received the houses assigned a higher value to their houses than those who had resettled much earlier. Besides, receiving a permit that accredits the occupancy has been mentioned as a favourable condition by the more recent settlers, while it was an unfavourable condition to long-term

settlers. The outcome of the interviews confirmed that the permit was simply evidence of occupancy, which can only be used to acquire utilities and other services, and does not reflect ownership of the property. In the short term, the communities did not feel the need for ownership, as they did not intend to modify, rent, or sell the property. Hence, they noted it as a favourable condition.

Further, availability of flood mitigation systems, streetlights, drainage systems, better transport facilities and frequent garbage collection among favourable conditions mentioned by the communities comprising long-term settlers. More recently resettled communities included the absence of these facilities among unfavourable conditions. This is because, physical and social infrastructure development takes a longer time than housing development. It may be noted in this context that Ahmed and McEvoy (2014) identify adequate infrastructure provision among the greatest challenges in economically less sound developing countries as it demands high capital investment and high technical capacity. Consequently, these facilities are provided at a slower phase to the communities.

The communities continuing to live in the disaster-prone zones is indicative of unfavourable conditions in their current location as an attraction for resettlement. While these communities did not experience a disaster or a displacement, their locations were identified as disaster-prone. As discussed in Section 7.1, vulnerability to a disaster is, however, an outcome of poverty (Cannon, 2008). The results support this observation, as the communities who continued to live in the selected disaster-prone zones were underprivileged tea-plantation workers. The workers still live in the traditional line-houses that are linearly attached houses with a small living room, a bedroom and a kitchen space, built during British colonial rule. Therefore, they welcome the resettlement plan that offers them detached houses. Further, the communities have noticed pointers to a landslide such as cracks in the wall and buckling of the floor, which pressed their need for an improved house. On the other hand, a safe location is identified as a favourable condition by the people who faced disaster and displacement. Studies show that children as well as adults who suffered disasters such as earthquakes, hurricanes, bushfires, civil unrest and war had experienced panic, phobias and depression as a result of anxiety (Udwin, Boyle, Yule, Bolton, & O'Ryan, 2000). The results of interviews agree with this view, as the communities that experienced a disaster emphasised a fear of disaster more than those who did not. This validates the higher priority to have a safe location to people who experienced a disaster than those who did not.

Further, land ownership is referred to as a favourable condition by the respondents in Case 9, who were from a community that had volunteered to resettle in their formally owned lands after prolonged displacement, of more than 25 years. Thus, returning to their owned

land was among favourable conditions for resettlement. According to Rahmatian (2008), human attitude to ownership of residential property is a complex phenomenon that has political, moral and economic bases. Ahmed (2011) notes that land and housing are considered as highly valuable assets by people, especially in developing countries. Based on that, legal ownership of a property gives an additional value to the settlers as it offers the security of uninterrupted possession (Baxter et al., 2015). This justifies why ownership of a property was a favourable condition for the voluntary settlers. As involuntary resettlements were mostly located on government land, there was no offer of ownership in the short term.

A location which is near the settlers' former location is identified as a favourable condition by the communities with livelihood associated with their location (e.g., fishing, tea plucking). Such communities are not in a position to alter their mode of livelihood owing to their limited education and training; and it is possible for them to continue with their existing livelihood, if the new location is close to their previous location. Moreover, places mean different things to different people. In the long term, people develop bonds or social attachment with places with the dimensions of belongingness and dependency (Westin, 2015). This is generally referred to as 'place attachment'. Thus, favouring a location near their previous location can be explained in the view of place attachment as well.

Besides these factors, all the other favourable conditions identified in Chapter 6 can be said to be specific to the case and context.

7.2 Unfavourable conditions

As with favourable conditions, some of the unfavourable conditions of an environment too are common for all the human beings, while some conditions are unfavourable only for a specific group (Lee, 1966). Unfavourable conditions for resettlement identified in each case as stated by the communities have been discussed in Chapter 6. Among them, irrespective of the context and classifications, some factors have been identified as unfavourable by a majority of the communities (4 or more). On the other hand, the unfavourability of some factors varies, both among similar and contrasting cases.

Table 32 lists the unfavourable conditions identified by a majority of the cases. It is important to note that Cases 4, 5 and 7 are not included here since a new location for resettlement was not been allocated for this population at the time of survey.

Table 32: Unfavourable conditions across cases

Unfavourable conditions	Cases					
	1	**2**	**3**	**6**	**8**	**9**
Houses need extension		✓	✓	✓	✓	✓
Inadequate space to extend the houses	✓		✓	✓	✓	
Defects in the houses/ poor quality of material/ poor quality of workmanship	✓	✓	✓		✓	
Lack of transport facilities	✓	✓	✓		✓	

The results show that, irrespective of contextual shade, most of the post-disaster resettled communities noted that the houses need extension and that the plots of land were too small to accommodate such extension. From questionnaire and case study findings, it appears that resettlement schemes in Sri Lanka often follow the 'one size fits all' policy rather than offer choices. Such policy is mainly adopted to facilitate speedy construction and efficient management. The desirable size of the house is, however, determined by many variables, which can vary from one household to another. Thiruppugazh (2016) identifies wanting more space and better access to livelihood, and the need to reconfigure their spatial relationships with other communities among such variables. Though some resettlement schemes offered flexibility, allowing increase of the floor area as necessary, most of the communities complained that the offered land was insufficient for such extension. Further, the extensions referred to also rely on the financial capacity of the beneficiaries. As pointed out in Section 7.1, the disaster-affected population generally represents the most disadvantaged segments of the society, and they face many difficulties including financial and legal issues in matters of extending and adapting the houses to meet their needs.

Defects due to poor quality of materials and workmanship is another unfavourable condition mentioned by most of the communities. Gunawardena and Wickramasinghe (2009) argue that defects and poor quality of the houses are outcomes of corruption, with contractors under-spending on materials and construction in order to increase their profit. However there are other studies attribute the problem to people seeking to alter or remove specific structural features (Ahmed, 2011) and to unawareness of the people about structural maintenance and lack of care to carry out regular maintenance (Jordan et al., 2015). However, the findings of the present analysis and of abovementioned similar studies identify defects in houses as a common problem in resettlements.

Another unfavourable condition identified by the majority of the communities is lack of transport facilities. The findings of the survey are that locations are mostly chosen in suburban or rural areas to enable large-scale construction. Therefore, distances to the networks of the resettled community, the main town, agricultural lands, marketplaces and the previous location become longer. This concurs with the findings of Jigyasu and Upadhyay (2016) that lack of transport is a typical unfavourable condition in large-scale resettlements in developing countries. This unfavourable condition also points to inadequate and inappropriate provision of road networks and transport facilities for the resettlements.

The unfavourable conditions described above are common across the cases considered, and Table 33 lists other context specific negative factors for resettlement that were identified by the analysis.

Table 33: Context specific unfavourable conditions

Unfavourable conditions	**Case**
Location prone to floods, soil erosion and other hazards	1, 2 and 3
No safety fences at the slope ends	8
Unimproved infrastructure facilities	1, 3, 8 and 9
Changes in land use pattern	9
Changes in social behaviour	3 and 9
No legal ownership	1, 2 and 3
Undefined boundaries	6
Insufficient physical and social infrastructure	1, 3 and 8
Disruption to livelihood/increased living expenses	2, 3 and 9
Furniture not fitting into the new house	8
Long time for housing construction	8
Disruption to social network	1
Inability to maintain houses	1 and 9
Climate inadaptability of the houses	1, 2 and 9
Culturally inappropriate design	2 and 3
Inability to continue livelihood activities	6

The results of the analysis showed that each of these unfavourable conditions apply only to a specific segments of the society. All the selected tsunami-resettlements are in the Batticaloa District, which is flood-prone owing to its landscape. Therefore, in all the tsunami resettlement cases, flooding and related issues are reported as negative conditions. Likewise, locations prone to soil erosion and lacking safety fences at slope ends are the two unfavourable conditions reported by the communities from landslide-affected districts. As the communities were affected by a disaster or related hazards, unsafe features in the new location could cause a sense of rejection towards the resettlement. Although hazard mitigation and risk reduction are among key objectives of a post-disaster resettlement, the findings point to inadequate consideration of those objectives. On the other hand, although the interview results show that all the post-landslide resettlement locations had been tested for landslide safety, the communities seek visible safety measures for future disaster reduction. A plausible reason, based on the interviews, why a landslide-affected community expects more safety features than the tsunami and conflict-affected communities is that, comparatively, the likelihood and frequency of a landslide is high.

Unimproved infrastructure is noted more widely in the cases with a host community than in the new developments. Generally, a large portion of the resettlement funds is spent for housing construction (Freeman, 2004). Consequently, investment on physical infrastructure, an essential aspect of resettlement that fulfils the housing experience, is less than desirable or even poorly provided. The findings of the study are that access to basic amenities such as water and electricity have actually improved since resettlement for both settler and host communities, whereas transport, drainage and healthcare facilities had not improved to match the increase in population. Studies have affirmed that the available resources in the host environment are overwhelmed by excessive use as they are not adequately supported (International Federation of Red Cross and Red Crescent Societies, 2013).

Change in land use pattern is another unfavourable condition mentioned by host communities. The results show that the lands used for resettlements were mostly barren or unattended woods before resettlement, and they were freely used by the host communities. Case study analyses showed that the lands were used for drain water disposal, firewood collection, chilli picking, and as walkways. Resettlement changed these patterns without providing alternatives, thus affecting the continuity of their lifestyle and becoming a setback to the adaptability of the built environment. Takesada et al. (2009) also point to similar scenarios based on comparable case studies conducted in Sri Lanka. Change in social behaviour is another unfavourable condition identified by communities including a host. Increase in consumption of alcohol, changes in political preferences, and

changes in social interactions are among the frequently mentioned. This implies a need to take some account of matters of livelihood and lifestyle of both host and displaced communities in order to help their adaptation to the new environment.

Absence of legal ownership is seen as an unfavourable condition by the communities. The results show that full ownership of the properties is not granted to the beneficiaries in most cases. As explained in Section 7.1, legal ownership of a property gives an additional value to the settlers as it provides the security of uninterrupted possession (Baxter et al., 2015). However, demand for ownership has been reported more in long-term resettlements than in new resettlements, a stated reason being that, in the long-term, houses need extensions or modifications owing to changing user requirements. Planning permission for such changes require ownership deeds. Further, in the long-term, alternative houses become available to the beneficiaries, and it motivates them for an economic gain from the received houses. Statements of many respondents confirmed this as they complained that they are unable to sell or rent the houses. This explains why the need for legal ownership fares prominently in the long-term.

Communities representing recent-resettlements pointed to undefined boundaries as an unfavourable condition. According to Lai, Chau, and Lorne (2015), a clear boundary demarcation represents the economic and the legal perceptions of efficient use of the property. However, in the view of the Experts (see Section 4.4.1), fund allocation for resettlement housing projects often do not provide for land surveying and property demarcation. Further, there are also legislative provisions that restrict the land surveying process at the outset, as the lands for the resettlements had been acquired under special conditions. It was observed that all the long-term resettlements had the boundary demarcation and boundary walls. Thus, it is noted as an unfavourable condition only by recent settlers.

As explained in Section 7.1, physical and social infrastructure development takes time, as it requires large capital investment and considerable technical input. Thus, inadequate physical infrastructure is mentioned as an unfavourable condition only by the new settlers, whereas its availability is stated as a favourable condition by long-term settlers. Further, disruption to livelihood is noted as an unfavourable condition by the new settlers. According to Brun (2009), suitability of the land for the livelihood and other activities of the resettled community is often either overlooked or paid scant attention to. Thus, the settlers, at the start of resettlement, struggle to continue or to establish their livelihood. The results show that this problem eases with time.

Some of the selected cases are direct resettlements, which allowed time for the people to plan and organise their resettlement by relocating their livestock, household equipment, food stock and construction materials, as necessary (Lakshman & Amirthalingam, 2009). Thus, they expect a house that would accommodate all their belongings. In the cases considered, the communities found the houses to be inadequate or too small to accommodate all their furniture. Hence, they pointed to this as an unfavourable condition, and demanded the right to use their former houses for storage. This issue is not commonly recognised in resettlements following displacement, as the beneficiaries normally would have lost most of their possessions in the disaster. Nevertheless, the present findings show that urgency of resettlement is more acute in cases that involve displacements, than in cases that do not. Results of the interviews (see Section 6.7.1) showed that the communities in temporary shelters suffered several issues such as hygiene issues, the absence of personal space, crowdedness and a sense of insecurity that were specific to the temporary shelter. Thus, urgency to move to a house was emphasised strongly in resettlements involving displacement, whereas, in direct resettlements, the time taken for construction is not widely noted as an issue.

The results of the analysis (see Section 6.2.2) showed a tendency of the communities relying on a nearby neighbourhood for various activities found that the continuity of this social network was disrupted following resettlement. Generally, community networks are established following marriage, schooling, and sharing livelihood activities (Rogers & Wang, 2006). It is further seen from the findings that the family and social network are key institutions for these communities in several contexts such as care for the elderly, childcare, lending and borrowing money, and labour. Since no alternative system has been evolved that addresses these matters, disruption of social networks had a severe impact on the welfare of the resettled communities. Also, involuntary settlers prioritised this issue more than voluntary settlers did because the location and neighbourhood were completely strange to them. The voluntary settlers, however, were returning to their former lands after prolonged displacement, and the neighbourhood was not entirely strange to them.

Besides the factors referred to here, all the other unfavourable conditions identified in Chapter 6 are specific to the case and context.

7.3 Resettlement procedure

Top-down approaches generally explain the execution of resettlement programmes with little or no reference to inputs from ground level stakeholders (Mannakkara & Wilkinson, 2016). Although the top-down resettlement procedures tend to be opaque to the communities, community respondents were asked to express their understanding of the

procedures. Table 34 lists procedures that have been identified in a majority of the cases (5 or more). It is important to note that, during the period of the survey, the new location for the resettlement was not yet allocated for the communities of Cases 4, 5 and 7. And it should be noted that in Case 6 Beneficiary selection was incomplete even as house design and construction were in progress, and this led to anxiety among temporarily housed victims.

Table 34: Resettlement procedures across cases

Resettlement procedures	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
Land selection and allocation	✓	✓	✓	✓		✓	✓	✓	
Beneficiary selection	✓	✓	✓					✓	✓
House design and construction	✓	✓	✓			✓		✓	✓
Infrastructure development	✓	✓	✓			✓		✓	✓
Issue of permits of occupancy	✓	✓	✓					✓	

The results show that the general resettlement procedures identified in Chapter 4 are common to all resettlements, irrespective of the nature of the cases. From the point of view of the communities, the resettlement procedure starts with land selection, and the beneficiaries are selected afterwards based on some selection criteria. The process then follows with house construction and infrastructure development, and concludes with the issue of permits. The procedures as understood by the beneficiaries broadly agree with the views of the Experts in matters such as the post-occupancy conditions of the resettlement not being followed, and lack of consultation with the communities to identify their preferences for housing or to take account of their socioeconomic backgrounds. This indicates that the communities did not have a sufficient overview of the resettlement procedures.

Land selection and allocation comprises a critical procedure of resettlement, and this process was not mentioned by the community that volunteered for resettlement. This was because the case of voluntary resettlement selected for study was the resettlement of a community in its former habitat after prolonged displacement. This community was given built houses on land that they owned and, hence, there was no land selection and allocation procedure. The results further show that the involvement and participation of the recipients were much higher in the voluntary resettlements, than in involuntary resettlements so that the execution of the procedures was smoother in voluntary resettlements.

The resettlement procedures described above are common across the cases, and Table 35 shows a list of other context specific resettlement procedures as identified from the analysis.

Table 35: Context specific resettlement procedures

Resettlement procedures	**Case**
New locations tested for future disaster risks	8
Former lands to be maintained by the beneficiaries	1, 2 and 3
Financial assistance given to the host communities for housing	1, 2 and 9
Arrangements for temporary shelters	1, 2, 3, 8 and 9

According to the respondents, all the resettlement locations for the landslide victims were tested for future landslide risk before construction. However, such procedure was not referred to in other cases. As described in Section 7.2, the likelihood and frequency of a landslide are much higher than that of a tsunami or even a social conflict. Thus, the importance assigned to avoid hazards and vulnerability in post-landslide resettlements is necessarily high. Nevertheless, respondents of all tsunami resettlements protested that their resettlement sites are flood-prone without an efficient mitigation system. This points to the importance of incorporating risk assessment for future disasters, not just the one that was experienced, as a procedure in all resettlements irrespective of the differences.

Another procedure referred to only by the post-tsunami resettlement communities was the government asking them to maintain their former lands. This is further confirmed by the Experts. The post-tsunami resettlement community did not give up their right to their original lands, as the government could not compensate them fully. Further, the government initially did not have any plans to develop or maintain the lands within the buffer zone. Subsequently, as it was essential to maintain the lands along the coast, the government rather than acquiring the lands insisted on the beneficiaries maintaining them. In cases of post-landslide resettlements, all the restricted zones were owned by the RPCs. Therefore, the responsibility to maintain the previous lands did not fall on beneficiaries.

All the cases studied where a host community was involved show that the host community was also given some amount of financial assistance for housing needs. Although, generally, disaster relief targets the affected community, subsequent to resettlement, there could be estrangement between the displaced and host communities caused by differences in the treatment received. Studies show that such differences in treatments remain for a

prolonged time and usually lead to social tension and hurt the relationship between the two groups (Duncan, 2005). The government or the resettlement agencies appear to have taken pre-emptive steps to avert such a situation in the selected cases (3 and 9) by through steps to maintain a social balance between the two communities by providing financial assistance for housing to the host community. Although providing housing assistance is in itself desirable, it is not sufficient to achieve the aim. The results of the survey showed that the absence of infrastructural provisions, the lack of host community consultation and inadequate improvements to socioeconomic facilities were among reasons for social imbalance. Considerations for social equity were not significant in new developments without a host community.

Providing temporary shelters during the period of construction of the resettlement was in some cases identified as part of the resettlement procedure. The term "temporary shelter" is generally used to refer to facilities where disaster victims are housed from the time that a disaster occurred until the allocation of permanent houses (Hu, Sheu, & Xiao, 2014). Some displacements do not require permanent resettlements where after a brief period, if the population can return to their original places. In such cases, public buildings such as schools and temples are used as temporary shelters. However, if the affected population needs permanent resettlement, providing an alternative temporary residence for the period of construction is essential as housing construction and resettlement take time. Schools and temples cannot be used as temporary shelters in such instances, as they need to be returned to their regular functions once the emergency has been overcome. The results show that, in some cases, the government converted some of the old structures such as a timeworn tea factory and a rice mill into temporary sheds. In some of the cases considered, temporary sheds were put up in the allotted land for resettlement, and in stages converted to permanent structures. Such process is irrelevant to cases of direct resettlement.

7.4 Expectations and needs

According to Day (2013), in the case of resettlements, the satisfaction of a beneficiary can be measured based on the extent to which the welfare of the community is conserved. In order to ensure the welfare of the community, it is essential to understand how the community perceives its welfare in relation to the built-environment based on its expectations and requirements. The expectations and requirements of the beneficiaries were identified using individual case study analysis. Attempt is made in this section to analyse the identified factors across cases. Table 36 shows the expectations and requirements that were identified in a majority of cases (5 cases or more).

Table 36: Expectations and needs across cases

Expectations and needs	1	2	3	4	5	6	7	8	9
Adequate/ improved physical and social infrastructure	✓		✓	✓		✓	✓		✓
Expect completed/ donor-built houses	✓	✓	✓	✓			✓	✓	
Ownership of the lands and houses	✓	✓	✓			✓		✓	
Livelihood restoration/ alternative employment opportunities	✓		✓			✓		✓	✓
Transparent resettlement process/ beneficiary selection	✓			✓		✓	✓	✓	

The infrastructure that supports the functionality of the community is a vital aspect of any built-environment (Moffatt & Kohler, 2008). Inadequacy of the essential infrastructure diminishes the functionality of a built-environment and hinders the adaptability of the users. On the other hand, as explained in Section 7.1, development of physical and social infrastructure is a highly technical, capital intensive process that takes a longer than housing development. Further, where there is involvement of a host community, the inadequacy of infrastructure facilities could induce conflict between communities. The availability and absence of adequate infrastructure as mentioned by the communities under favourable and unfavourable conditions, respectively, have been stated in the preceding sections. Such factors have also been identified by most of the communities as a requirement for long-term resettlement.

Most of the communities expected completed or donor-built houses (see Table 36). As explained in Section 2.2.1, owner-driven and donor-driven houses represent two contrasting approaches to resettlement. In owner-driven construction, the government or the donor agency provides some degree of financial and technical support while the recipient retains control over housing construction, while, in donor-driven construction, the government or the donor agency assumes full responsibility (Karunasena & Rameezdeen, 2010). The results of this study showed that settler communities prefer the donor-driven approach to owner-driven. Based on a study in post-earthquake Gujarat, Thiruppugazh (2016) found that communities who were below poverty line, or landless, or backward preferred NGOs building the houses, whereas, large farmers, big families and those above poverty line preferred to build houses on their own. The results of this study also show similarities, as all the selected cases represented poorer segments of the society.

Ownership of the property is an expectation mentioned by most communities. As explained in Section 7.2, legal ownership of a property provides additional value to the settlers as it offers security for uninterrupted possession (Baxter et al., 2015). However, the main reason stated by the communities in support of their expectation was that the lack of legal ownership restricts them from renting, or selling the houses. It is widely observed that many of the beneficiaries were motivated to get economic benefit out of the resettlement houses rather than live in them. Experts identified this as a reason why the government restricts ownership rights (see Section 4.4.1). Studies have identified various factors that stimulate the householders' motivation to sell. Glower, Haurin, and Hendershott (1998) prioritise the cost of holding a property, having an alternative, and change in location of employment among primary motivations. Outcomes of the case studies show reference to these three factors, which justify the settlers' need for ownership.

The communities of a majority of the selected cases had a change in livelihood, as their livelihoods has been associated with their location. Besides, most of the resettled generally engaged in traditional work and, owing to their low level of education, could not readily change to other jobs. It should be added that acquiring new skills is not easy, especially if one is not young. Jordan et al. (2015) identified similar issues in a study in India and considered it a reason for resettlement failure. Thus, the resettled communities also expect the government to provide amenities for restoration of livelihood or opportunities for alternative employment. It is evident from Section 7.1, however, that new resettlement sites close to the community's original site, on the other hand, helped to retain the social, cultural and economic fabric.

Transparency of the resettlement process is a stated expectation of the resettled communities. The findings of the analysis (see Section 4.4.3) show that resettlement programmes in Sri Lanka are executed with little or no reference to ground level stakeholder inputs. Thus, communities think that this approach restricts the ability of the government or the implementation agencies to accommodate the needs of the communities and consequences for its acceptance. The interview responses further show that the communities refer to lack of transparency in the beneficiary selection criteria and suspect forged documents among papers recommending relief to victims. The need for community consultation prior to and during resettlement is urged in Section 4.4.3 to ensure more effective implementation of the resettlement programmes.

The expectations and needs described above are common across cases. Table 37 contains a list of other context specific resettlement procedures identified from the analysis.

Table 37: Context specific expectations and needs

Expectations and needs	Case
Spacious/ detached houses	4 and 5
Safe location	4, 6 and 7
Populated location	1, 3 and 9
Parallel development activities for the host communities	3 and 9
Social cohesion programmes among communities	2 and 3
Retention of ownership of former property	2 and 8
Speedy resettlement process	6
Location with easy access to nearest town and former location	1, 3 and 5
Culturally appropriate houses	3
Compensation for damaged houses	5
Larger plots of land	8
Customised houses addressing specific needs	2 and 9

Spacious/ detached houses and safe location are two location-specific expectations expressed by the respondents. The post-landslide victims and potential victims are traditional tea-plantation workers in all selected cases. Sri Lankan tea-plantation workers have lived for generations in line-houses built during British colonial rule. They are one-room houses with brick walls and corrugated metal sheet roof. The one-bedroom houses initially meant for a couple, and perhaps small children two hundred years ago, now house as many as eight family members or more for lack of alternatives. Thus, the beneficiaries view the resettlements as a social upgrading programme as well that offers a better standard of living and, hence, expect a more spacious detached house under the resettlement programme. Besides, some safety concerns too were pointed out in some post-landslide resettlement cases. Further, in all the selected post-tsunami cases the beneficiaries were, as explained in Section 7.2, located in a flood-prone zone without adequate mitigation. The primary purpose of any resettlement programme is to relocate disaster victims at a safer location. However, the evidence is that this objective was not met in some instances. Accordingly, the communities included this among expectations from the resettlement programmes.

The selected cases included both resettlements among host communities as well as new developments. The results indicate strong preference among beneficiaries to be resettled in populated locations. Other studies too have observed that the displaced communities usually prefer to live with a host community it makes them feel physically, emotionally and spiritually safer (Davies, 2012). While large-scale resettlement schemes can generally be crowded (Keraminiyage & Piyatadsananon, 2013), a new settlement can become a crowded town as infrastructure developments start to attract people. Thus, both communities expecting resettlement and recently resettled communities have widely noted this factor.

Parallel development activities for host communities and programmes for social cohesion are two expectations frequently noted by communities resettled among another community. Access to adequate infrastructure is a common problem faced by the resettled community as they have lost access to their water bodies, forestland and grazing land owing to the disaster (Cernea, 1995). Although the infrastructure development is critical and essential to a previously uninhabited resettlement location, appropriate upgrading of infrastructure of locations already populated with another community should be given priority in order to ensure social cohesion and cohabitation. Thus, the communities expect the social and physical infrastructure developments to cater both communities.

Among the selected cases, some are direct resettlements that did not involve displacement, and the communities concerned expect to retain ownership of their unharmed previous houses. Resettlement programmes were initiated for these communities following their former locations being declared as disaster-prone. As the former houses were intact, the communities are hopeful of alternative use of these houses, for instance, as a storeroom. In the cases of post-tsunami resettlements, the beneficiaries had been asked to maintain their lands within the buffer zones as the coastlands could not be left abandoned. In the case of post-landslide resettlements, however, since the line-houses belong to the plantation management, the communities are not entitled to have access to them after resettlement. Nevertheless, the communities expect to retain possession of the houses as they had invested much of their earnings to develop them.

On the contrary, the people who underwent displacement expected a speedier resettlement process. As explained in Section 7.2, communities experienced various problems in their temporary shelters including issues of hygiene, absence of personal space, overcrowding and a sense of insecurity. Therefore, the urgency to move for a house was strongly emphasised in resettlements that involved displacement. Besides these factors, all the other expectations and requirements identified in Chapter 6 are specific to case and context.

7.5 Discussion

One of the objectives of this study was to examine the top-down procedures and ground level perceptions of post-disaster resettlements, in order to determine a middle ground where there is a perceivable gap. The cross-case analysis above was intended to identify similarities and outliers across cases. The findings replicate some of the concepts defined in the literature review (see Chapter 2). For instance, the results affirm all fourteen built-environment adaptability issues identified in Section 2.2.2, based on cases studies conducted in several other developing countries. This shows that issues of post-disaster resettlement in developing counties have much in common, including some of the issues and good practices identified in Sri Lanka.

The study further showed that, based on resettlement procedures, identified favourable and unfavourable conditions, and expectations and requirements, cases can be grouped based on specific parameters, and thus identify aspects that need differences in treatment. The researcher identified the following five parameters to classify the cases studied.

1. Type of disaster
2. Involvement of host community
3. Phase of resettlement
4. Involvement of displacement
5. Voluntariness for the resettlement

A significant dissimilarity identified among the cases chosen is the type of disaster. Disruption caused to a community by disaster may vary depending on the type and severity of the disaster. According to Robinson (2003), disasters such as floods, tidal waves and volcanic eruptions, have a sudden impact on the physical, economic and social structure of a community. There are other disasters whose impact is gradual with a slow onset like, for example, environmental degradation and drought (see Table 2 for disaster classifications). This shows that urgency for resettlement and the capacity of the communities to cope will vary with type of disaster.

Secondly, the involvement of the host community is identified as a parameter. Occasionally, resettlements are developed in a host environment. In such cases, infrastructure and other economic and social provisions should be planned to cater to both settler and host communities. Thus, more than in new developments, problems and predicaments become prominent in contexts where the new resettled community and their host community co-exist and share the resources of the location (Brun, 2000). Involvement of host community was thus selected as a parameter to compare cases and provided useful

insights. Further, the immediate needs and expectations of a community and the impact of resettlement may change in the long-term. Cheap labour for local work, increased foreign assistance and joblessness are among immediate impacts of resettlement, according to Whitaker (1999). Such effects do not, however, last in the long-term. Similarly, the effects of adaptability to built-environment also may change through different phases of resettlement. Thus, the phase of resettlement was selected as a parameter for cross-case analysis, and the findings confirm its relevance.

Resettlement following a displacement and direct resettlement involve different processes. Direct resettlement occurs when a location is identified as disaster-prone. Here, the people are unaffected by disaster, and often people are allowed time to plan and organise their resettlement by relocating their belongings as necessary (Lakshman & Amirthalingam, 2009). On the other hand, resettlements after displacement often impose urgency, as the people would normally have lost their houses in the disaster. Therefore, this difference too was considered as a parameter, and found significant, to identify the similarities and dissimilarities between the two types of resettlement.

As explained in Section 2.1, the term 'resettlement' was defined with involuntariness and permanency as its characters, for the purpose of this research, because, mostly, post-disaster resettlements occur, soon after a location is declared as a disaster-prone zone. This denies the people the option to stay on. However, a voluntary resettlement is selected as a case was also chosen, to enhance the generality of the study and in the process identify characteristic differences between voluntary and involuntary resettlements.

Table 38 shows the classification of cases based on the identified parameters.

Table 38: Parameters identified from the cross-case analysis

Parameters	**Categories**	**Cases**
Type of disaster	Tsunami	1, 2 and 3
	Landslide	4, 5, 6, 7 and 8
	Conflicts	9
Influence of host community	With host community	3 and 9
	Without host community	1, 2, 4, 5, 6, 7 and 8
Phase of resettlement	Expecting resettlement	4, 5, 6 and 7
	Recent resettlement	8 and 9
	Long-term resettlement	1, 2 and 3

Influence of displacement	Resettlement after displacement	1, 2, 3, 8 and 9
	Direct resettlement	4, 5, 6 and 7
Voluntariness for resettlement	Voluntary	9
	Involuntary	1, 2, 3, 4, 5, 6, 7 and 8

7.6 Summary and link

This chapter presented the cross-case analysis. Firstly, the favourable conditions in a resettlement were analysed across cases, followed by the unfavourable conditions of the same. That was followed by an examination of the resettlement procedures from the perspective of the communities, and finally a presentation of the expectations and requirements of the communities. Based on the analysis, five parameters of the cases were identified, depending on which cases require a difference of treatment. Based on the analysis of cases thus far, the findings and the outcome of the study will be presented in the chapter that follows.

Chapter 8 : Findings and Outcomes

How the cases studied replicated or contrasted with each other was explained in Chapter 7, based on the cross-case analysis. The empirical research findings are presented in this chapter by comparing the results of the questionnaire survey, expert interviews, document reviews and case studies. Following which, the underlying mechanism of resettlement dissatisfaction are described, and a strategic level framework is presented to enable enhancement of the resettlement process. The chapter concludes with the findings of the validation process.

8.1 Revisiting the conceptual framework

The empirical research design for the present study was developed based on a stated conceptual framework provided in Section 2.6.1, which also outlines the empirical aspects of the study. The conceptual framework was developed based on the research gap identified from the literature review. The framework is built on the recognition of gaps and barriers in the top-down procedure and bottom-up perceptions that need reconciliation to improve the longevity of resettlements; and it relates the objectives of the study to the features that lead to the development of a detailed framework. The purpose of the detailed framework is to recognise the said issues relating to the unsatisfactory features of the resettlements by recommending actions for improvements.

The empirical findings of the present study describing the gaps and barriers of the top-down procedure have been presented in Chapter 4; and the favourable and unfavourable conditions, and expectations and obstacles of the grassroots beneficiaries have been discussed in detail in Chapters 5, 6, and 7. The analysis establishes the gap between top-down and bottom-up perceptions, and reporting the gap in a coherent framework requires the logical establishment of the problem. The stated problem of this research concerns the risk of dissatisfaction in large-scale resettlements that has been observed and recognised in many resettlement schemes around the world (Barenstein, 2015; Jigyasu & Upadhyay, 2016; Muggah, 2008; Oliver-Smith, 1991). In conventional economic terms, satisfactoriness of a built environment is measured based on the customers' willingness to pay. According to Day (2013), in the case of resettlement, it may be measured based on how well the resettlement ensures that there is no loss in community's welfare. Based on that, attempt is made in the next section to explain the mechanism of resettlement dissatisfaction, based on the empirical findings.

8.2 Underlying mechanism of resettlement dissatisfaction

Resettlement is a critical post-disaster recovery phase as it involves the creation of an entire new built-environment for the displaced population. Findings of the literature review

show that (see Section 2.2) the well-established disaster recovery process, which includes response and relief, recovery and reconstruction, mitigation, and preparedness, is not often sustained until the end of the process. This is a potential obstacle to ensuring that the resettlements last for a long time. Expert interviews and case study findings also triangulate the presence of this issue in the Sri Lankan post-disaster recovery context. This problem is an outcome of treating the phases of recovery as sequential and expecting them to follow a given order. Therefore, it is essential to mix different recovery phases such as mitigation and preparation strategies during the course of large-scale housing reconstruction.

Based on the above, the findings of the present study show that the resettlement process in Sri Lanka follows a top-down/centralised approach that seems to explain the execution of resettlement programmes with little or no reference to inputs from ground level stakeholders. The opposite alternative to this approach is the bottom-up/decentralised approach that determines the details of the execution of resettlement programmes with the participation of the community and local-level organisations. Both approaches have their strengths and weaknesses in relation to planning and implementation. The conceptual framework (see Section 2.6.1) developed through a thorough literature review justifies mixing of the two approaches to find a middle ground that helps to eliminate the obstacles by combining the strengths of the two approaches. Based on the considerations referred to above, the present study aims to propose a framework that will improve the process of post-disaster resettlements in Sri Lanka.

Understanding of the resettlement dissatisfaction is essential to determining the structure of the framework. Such dissatisfaction can be approached from different perspectives such as the economic, socio-cultural and political perspectives, among others, and solutions may be provided accordingly. The present study considers resettlement dissatisfaction relating to the built-environment as justifiable as explained in Section 2.2.1. In this connection, Ganapati (2016) groups resettlement failures into two kinds: firstly, project-related failures, such as poor planning, implementation, coordination, and participation of the programme; and secondly, outcome-related failures, such as culturally inappropriate houses, inappropriate materials and technology, and failure to meet needs and expectations of the community. Research findings of the present study also reflect similar issues in the areas explored. Nevertheless, based on the philosophical stance of the researcher (see Section 3.2), namely critical realism, this study presumes an underlying reality that shapes the observable events. Accordingly, the retroductive approach was followed to discover the underlying mechanism of resettlement dissatisfaction by working back from the observed regularities to a possible explanation.

Attempt is made in this section to construct a possible explanation for resettlement dissatisfaction which could be explained based on the common features identified in Chapters 4, 5, 6, and 7. Accordingly, a model as shown in Figure 75 is proposed to explain the underlying mechanism of resettlement dissatisfaction. This model is presented as a graph relating the phases of the resettlement and the desire of the victims to possess a house. The explanatory structure for the model is presented in tabular form (see Table 39) in the interest of easier readability. Table 39 identifies the key features of the model along with the identified regularities.

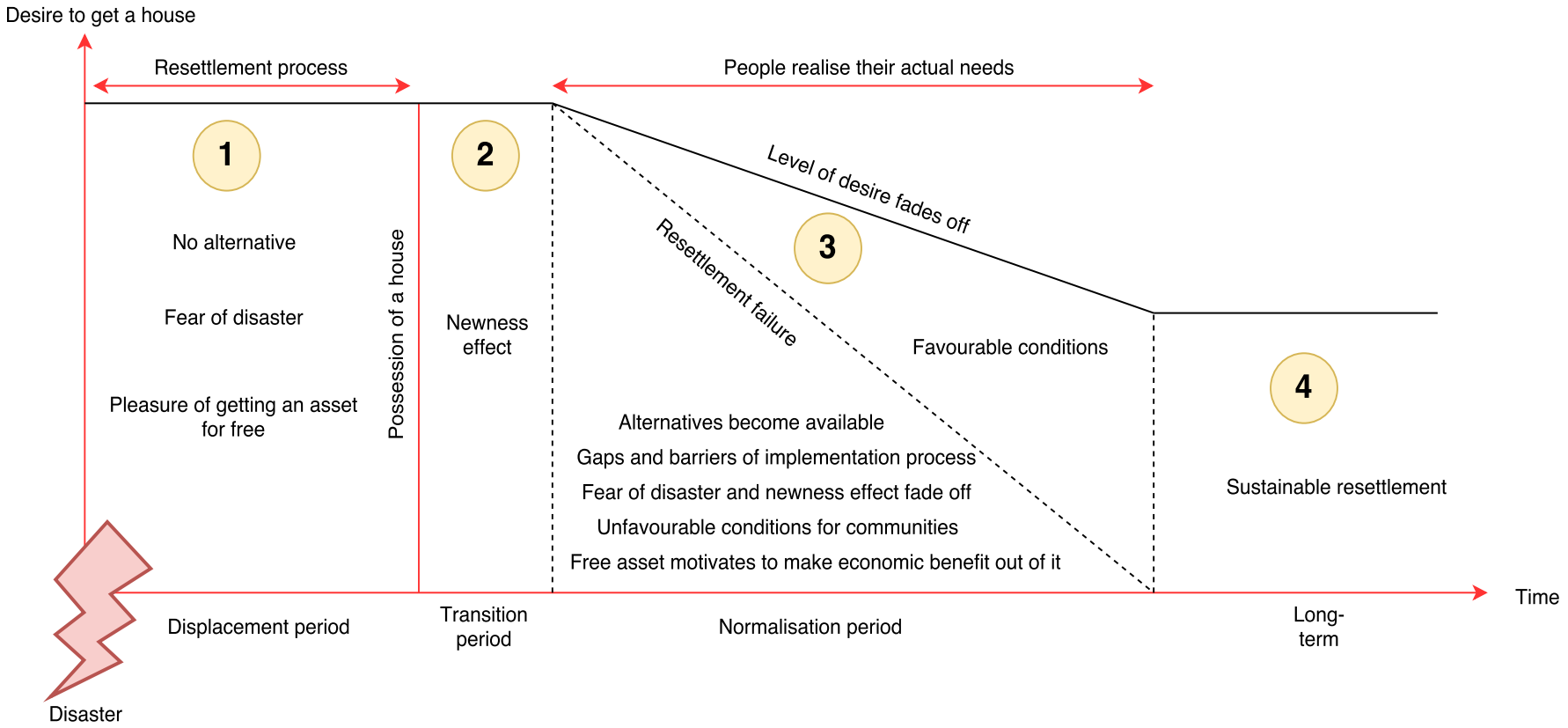


Figure 75: Underlying mechanism of resettlement failure

Table 39: Explanatory table for the model

Features of the model	Identified regularity	Cross-link	Explanation
Structure of the model			
X-axis of graph: phase of the resettlement	Expectations of beneficiaries vary with the phase of resettlement	Cross-case analysis, Chapter 7, Section 7.4	The cross-case analysis results reflect that the phase of resettlement is one of the parameters that influences the positive and negative conditions of the location and the expectations of the beneficiaries. Thus, it is reasonable to assume that the desire to possess a house may also vary according to changes in expectations of the recipients. Thus, resettlement failure can occur during different stages depending on the change in desire of the beneficiaries.
Y-axis of graph: desire to get a house	Urgency to get a house is higher for victims affected by disaster than for direct resettlement beneficiaries	Case study analysis, Chapter 6, Sections 6.5.4 and 6.7.2; and Cross-case analysis, Chapter 7, Section 7.4	Individual case study and cross-case study analyses show that urgency is higher for disaster victims living in temporary shelters than for those living in the disaster-prone zones. This shows that soon after a disaster the need for housing is seen as a primary need by the victims. Further, all the victims were willing to move to the resettlement. Thus, likely decline in this desire is another parameter to explain resettlement failure

Features of the model	Identified regularity	Cross-link	Explanation
Resettlement process following a disaster starts during the displacement phase	Resettlement process is quicker and concrete for post-disaster resettlements than for hazard-induced direct resettlements	Case study analysis, Chapter 6, Sections 6.5.4 and 6.7.2; and Cross-case analysis, Chapter 7, Section 7.4	Individual case study and cross-case study analyses show that the resettlement process is procrastinated for people living in disaster-prone zones, as the urgency was not appreciated by the authorities. The results show that, in contrast, the post-disaster resettlements were more organised and procedural. The reason for the difference is that, following a disaster, victims lack alternatives and live in temporary shelters. This imposes urgency upon the authorities. Also, disaster events attract funds from local and international charity organisations to invest in housing reconstruction. Thus, this model adopts the disaster event as the start of the resettlement process. The model could be adapted for direct resettlements by adding or removing context-specific features as needed. But that task is outside the scope of this study.
Phase 1			
Phase 1 of the resettlement process	Temporary shelters are arranged by the government to house	Expert interviews and document analysis, Chapter 4, Section	Case study analyses indicates that soon after a disaster, some lands become unusable or unsafe for habitation and are consequently declared as prohibited zones.

Features of the model	Identified regularity	Cross-link	Explanation
comprises the displacement period.	disaster victims during period of construction	4.3.3; Case study analysis, Chapter 6, Section 6.2.4, 6.6, 6.7.4, 6.8; and Cross-case analysis, Chapter 7, Section 7.3	Thus, the people live in temporary shelters until a resettlement programme is offered. Need for resettlement is recognised during the displacement period. Further, expert interview results reveal that the officials feel a sense of urgency to provide resettlement programmes to the people as government intervention is a factor in revoking the choice of the people to return to their old houses.
Desire to get a house is higher during displacement period	The urgency to receive a house is higher for the victims of disaster than for direct resettlement beneficiaries	Case study analysis, Chapter 6, Sections 6.5.4, 6.6.2, 6.7.4 and 6.8.2; and Cross-case analysis, Chapter 7, Section 7.4	Results show that post-disaster victims express the need for a permanent house more than direct resettlement beneficiaries. Therefore, it is reasonable to assume that the desire to possess a house is higher during this phase. Identified reasons for this tendency are explained in the cells below.
Unavailability of alternatives is a reason for high desire to get a	Disaster victims live in temporary shelters during housing construction. Undesirable conditions in temporary shelters are	Case study analysis, Chapter 6, Sections 6.5.4, 6.6.2, 6.7.4 and 6.8.2; and Cross-case analysis,	Restrictions to build or rebuild permanent structures in disaster-affected locations constrain the victims from renovating their fully or partially damaged houses. Since most of the disaster victims represent the deprived layers of society, multiple-house ownership is

Features of the model	Identified regularity	Cross-link	Explanation
house during displacement period	identified as an attraction towards the resettlement.	Chapter 7, Section 7.4	uncommon. Most of the victims used to live in temporary, semi-permanent, or line houses. Thus, they lacked immediate alternative accommodation. Thus, they depended on the government for resettlement and possession of a permanent house become a priority.
Fear of disaster is another reason for high desire to get a house during displacement period	Communities that faced a disaster expressed fear of disaster more than those in disaster-prone zones. Disaster victims were reluctant to return to their former places after the disaster owing to fear, and prioritised a safe location.	Case study analysis, Chapter 6, Section 6.4.4, 6.5.1, 6.8.2 and 6.9.2; and Cross case analysis, Chapter 7, Section 7.1	Studies show that the victims who suffered disaster experience panic and depression out of fear. Interview results endorse this as the communities who experienced a disaster expresses fear of disaster more than those who had not. This validates the priority of safe location for disaster victims. Owing to the traumatic disaster experiences in their previous places, expectation for a permanent house and willingness for a resettlement are high among disaster victims.
Pleasure of getting an asset for free is among reasons for high desire	Beneficiaries emphasise need for ownership. The primary reason as expressed by the respondents is their	Expert interviews and document analysis, Chapter 4, Section 4.4.1 and 4.4.4; Case study analysis,	Land and houses are considered as valuable assets in Sri Lanka. As most of the victims are incapable of acquiring them on their own, they see in the disaster and consequent restrictions an opportunity to own a house for free. The results show that some forgeries were

Features of the model	Identified regularity	Cross-link	Explanation
to get a house during displacement period	inability to sell or rent the property.	Chapter 6, Section 6.2.2, 6.2.4, 6.3.4, 6.4.2, 6.4.4 and 6.7.2; and Cross-case analysis, Chapter 7, Section 7.2	spotted by the officials when the number of families claiming for houses exceeded the number of houses being built. Also, there was evidence of unaffected families living in the temporary shelters, for the sake of getting a house. Thus it is fair to assume that the post-disaster need for urgent housing is statistically exaggerated, although it is a primary need.
Resettlement process ends with handing over of houses	Resettlement is treated as a linear process in Sri Lanka, which ends with handing over the houses. Further, the government and donor organisations do not accept responsibility to monitor long-term performance of the facilities provided.	Expert interviews and document analysis, Chapter 4, Section 4.3.9; Case study analysis, Chapter 6, Section 6.2.2, 6.2.4, 6.3.2 and 6.9.3; and Cross-case analysis, Chapter 7, Section 7.3	Results show that resettlement is generally viewed as a process of providing lands and houses for disaster victims. Officially, the process end with the handing over of houses to beneficiaries. Expert interview results and case study results show that officials do not accept responsibility to monitor the long-term performance of the facilities provided. Thus, negative consequences of reproducing the same resettlement plans recur as officials commit the same unidentified mistakes.
Phase 2			

Features of the model	Identified regularity	Cross-link	Explanation
The second phase of resettlement comprises the transition period.	Soon after receiving new houses, beneficiaries move from temporary shelters to the houses. The resettled population starts to adjust to the new built-environment in this period	Expert interviews and document analysis, Chapter 4, Section 4.3.10	Results show that the beneficiaries appeared willing to move to the new location as soon as they receive the houses. However, it takes considerable time to recognise and adjust to the new built-environment. During this period, the beneficiaries do not identify their actual needs from the resettlement. Thus, this phase is identified as transition phase.
The desire to possess a house remains high during the transition period owing to the newness effect	Recently resettled communities note the newness of the houses as a positive factor for resettlement.	Case study analysis, Chapter 6, Section 6.9.1; and Cross case analysis, Chapter 7, Section 7.1	The findings show that communities that received the houses recently, unlike those who resettled for a long time, assigned an additional value to the houses. This incremental value, termed 'newness bias', keeps high the desire of beneficiaries to possess a house, during the transition period.
Phase 3			
The third phase of the resettlement comprises the normalisation period	Disruption to livelihood, absence of infrastructure, and undefined boundaries are among unfavourable	Case study analysis, Chapter 6, Section 6.2.2 and 6.3.2; and Cross case analysis,	Cross-case analysis showed that the problems/ unfavourable conditions identified by recent settlers differ from those by long-term settlers. Their unfavourable conditions mostly related to the struggle to

Features of the model	Identified regularity	Cross-link	Explanation
	conditions mentioned by recent settlers.	Chapter 7, Section 7.2	adapt to a new environment, because, it is during this phase that the settlers understand the dynamics of the resettlement and adjust to the environment and thus first encounter adaptability issues in this phase.
Desire to possess a house fades off during normalisation	Beneficiaries have expressed intention to sell or rent a property. Abandonment of houses, illegal selling and renting of properties are more common in long-term resettlements.	Expert interviews and document analysis, Chapter 4, Section 4.4.1 and 4.4.4; Case study analysis, Chapter 6, Section 6.2.2, 6.2.4, 6.3.4, 6.4.2, 6.4.4 and 6.7.2; and Cross-case analysis, Chapter 7, Section 7.2	The case study findings showed that the need for ownership is most emphasised by long-term settlers with intention to sell or rent the property. Besides, the principal researcher observed abandoned houses mainly in long-term resettlements. This shows that the desire to possess a house fades off during the normalisation period. Explanation for the decline is given in the cells bellow.
Decline in desire for new house is driven by availability of alternatives.	The Buffer Zone and other restrictive policies lose their rigour in the long-term. Further, with time, beneficiaries seek	Expert interviews and document analysis, Chapter 4, Section 4.3.2; and Case study analysis, Chapter 6,	Lack of alternatives is a factor that accentuates housing needs after a disaster. However, without an increase in income, some recipients found it expensive to maintain or retain the resettlement property in the long term. Subsequently, they seek cheaper options. On the other

Features of the model	Identified regularity	Cross-link	Explanation
	cheaper options if it is expensive to maintain or hold on to the resettlement house.	Section 6.2.1, 6.2.3, 6.3.3, 6.3.4 and 6.4.3	hand, it was seen that the restricted-zone policies lost their rigour in course of time and makes the former locations available for occupation by the recipients. This motivates the people to reoccupy their former properties. Thus, the availability of an alternative weakens the will to hold the resettlement property.
Gaps and barriers in the implementation process also contribute to the decline in desire.	Inefficient resettlement implementation process is often identified as an unfavourable condition affecting the adaptability of settlers.	Expert interviews and document analysis, Chapter 4, Section 4.3; Case study analysis, Chapter 6, Section 6.7.3; and Cross case analysis, Chapter 7, Section 7.2	Results of expert interviews and document analysis pointed to the gaps and barriers of the top-down procedure at policy level, implementation, land selection and beneficiary selection criteria, house design, house construction, and community involvement. These lapses lead to dissatisfaction during the normalisation phase, when the beneficiaries realise that their expectations have not been fulfilled because of the identified gaps and barriers; and face difficulties in adapting the environment to become disappointed with the resettlement, and lose motivation to hold on to the resettlement property.
Fading off of fear of disaster and newness	Fear of disaster and newness effect are two	Expert interviews and document analysis,	Long-term settlers expressed preference to return to their former locations or retain the ownership of former

Features of the model	Identified regularity	Cross-link	Explanation
effect also stimulate the decline in desire	characteristics of recent settlers. In contrast, long-term settlers do not show such characteristics.	Chapter 4, Section 4.3.9; and Case study analysis, Chapter 6, Section 6.4.4	properties. This suggests that the traumatic impression of the victims about their previous places based on the disaster was a temporary mental state which faded with time as the likelihood of disaster receded. The results also show that the additional value assigned by the recipients to the new property, known as newness bias, also declined with the time. Thus, the elimination of reasons that favour the desire to possess a new house leads to a decline in desire to hold on to the property.
Unfavourable conditions in the new location are among factors inducing a decline in desire	Unfavourable conditions concerning size and quality of the houses are evident in most cases. Further, inadequate infrastructure, undefined boundaries, and unavailability of legal ownership are among unfavourable conditions	Questionnaire survey analysis, Chapter 5, Section 5.3.5; Case study analysis, Chapter 6, Section 6.2.2, 6.3.2, 6.4.2, 6.5.2, 6.7.2, 6.9.2 and 6.10.2; and Cross-case analysis, Chapter 7, Section 7.2	Unfavourable conditions for the beneficiaries are related to the outcomes of the resettlement process. Case study results show that the recipients takes considerable time to adapt the new environment. Nevertheless, the respondents reflected that unfavourable conditions in the new environment hampered adaptability. Built-environment related and other socioeconomic unfavourable conditions can mostly be linked to miscommunication between top-down procedures and bottom-up perspectives. Eventually, the combination of

Features of the model	Identified regularity	Cross-link	Explanation
	specific to the resettlement phase.		adverse conditions and unfulfilled expectations lead to a decline in the desire to hold the property.
Motivation to make a profit from the free asset is a factor leading to the decline in the desire	Long-term settlers show an interest in renting or selling their resettlement houses	Expert interviews and document analysis, Chapter 4, Section 4.4.1 and 4.4.4; Case study analysis, Chapter 6, Section 6.2.2, 6.2.4, 6.3.4, 6.4.2, 6.4.4 and 6.7.2; and Cross-case analysis, Chapter 7, Section 7.2	Case study results show that the beneficiaries do not entirely give up the ownership of their former locations. Even beneficiaries who did not own a permanent house before desired access to the old residence. This implies that the resettlement property was seen as an additional asset acquired free of cost in place of compensation. The results also show that maintaining the resettlement property was too expensive to some beneficiaries. Thus, recipients to whom the resettlement property was an additional but costly asset to retain were motivated to make a profit out of it by selling or renting, thereby diminishing the desire to hold on to the property.
Favourable conditions in the resettlement location arrest the decline of desire	Favourable conditions in the location, particularly, availability of physical and social infrastructure as frequently noted by respondents, encourage	Case study analysis, Chapter 6, Section 6.2.1, 6.3.1, 6.4.1, 6.5.1, 6.7.1, 6.9.1 and 6.10.1; and Cross case analysis,	Case study analyses confirm that resettled communities had lived without or amid inadequate physical and social infrastructure facilities before resettlement. Hence, the provision of the facilities upgraded their living standard and motivated them to remain in the resettlement. Further, relatively better houses, safe location, and

Features of the model	Identified regularity	Cross-link	Explanation
	beneficiaries remain in the resettlement.	Chapter 7, Section 7.1	proximity to previous location and town centre fared among features frequently mentioned as favourable conditions in the location that served as attractions that sustained desire to keep the property.
Phase 4			
The final phase of the resettlement comprises sustained long-term resettlement	Satisfied beneficiaries remain in the resettlement for long.	Case study analysis, Chapter 6, Section 6.2.1, 6.3.1, 6.4.1, 6.5.1, 6.7.1, 6.9.1 and 6.10.1; and Cross case analysis, Chapter 7, Section 7.1	Unless the desire to hold the property reached zero, the beneficiaries would remain in the resettlement for a long term.

Figure 75 illustrates the underlying mechanism of resettlement dissatisfaction, and Table 39 explains the essential features of the underlying mechanism shown in the figure. According to the identified underlying mechanism, the desire to possess a house remains at its peak through the displacement period. The reasons for this initial attraction of the house are: want of safer alternatives, traumatic impressions of previous location associated with the disaster, and fascination with the new house. Subsequently, during normalisation, the desire to remain in the resettlement declines for five reasons identified in the present study. They are namely, availability of alternatives, gaps and barriers of implementation process, the fading of traumatic impression and newness bias, unfavourable conditions in the new location, and tendency to make economic gain out of houses by selling or letting. This shows that at this phase the settlers recognise their actual needs from resettlement, and the prevailing reasons for the desire to remain during the first two phases fade off. The decline in desire to remain, leads to dissatisfaction if resettlement is managed inadequately. Favourable conditions or the attracting factors in the resettlement location can arrest the decline to some degree. However, addressing the causes of decline is essential to sustain and achieve the primary purpose of the resettlements. Accordingly, the empirical findings of this study are organised as a strategic level framework that can be used as a reference to enhance the post-disaster resettlement process.

8.3 A framework to enhance post-disaster resettlements

Development of a framework is the centrepiece of this research. In social science research, a framework is variously defined by scholars. Ngulube et al. (2015), based on their study of a collection of definitions, identify a research framework as a tool for the researchers to interpret and understand empirical findings. Desjardins (as cited in Patrick, 2018) defines research framework as a logically structured representation of concepts, variables or relationships based on a scientific study. Accordingly, the outcome of this empirical study is logically structured and developed as a framework to enable interpretation and understanding of the problem examined. Primarily, the findings are arranged under the three research gaps shown in the conceptual framework (see Figure 6). The framework identifies the gaps in the resettlement process and provides indicative suggestions that would enable enhancement of the resettlement process. The framework intended to facilitate policymakers and resettlement agencies in the planning and implementation of resettlements. Proposed indicative actions for each issue are based on a literature review of tested cases and validated using a series of expert interviews, in order to assure reliability and authenticity of the findings. The validation process was undertaken to validate both the underlying mechanism model and the extended framework. The validation procedure is explained in Section 8.4; and Figure 76 and following documents

present the validated framework. (The initial framework before validation is provided in Appendix 6).

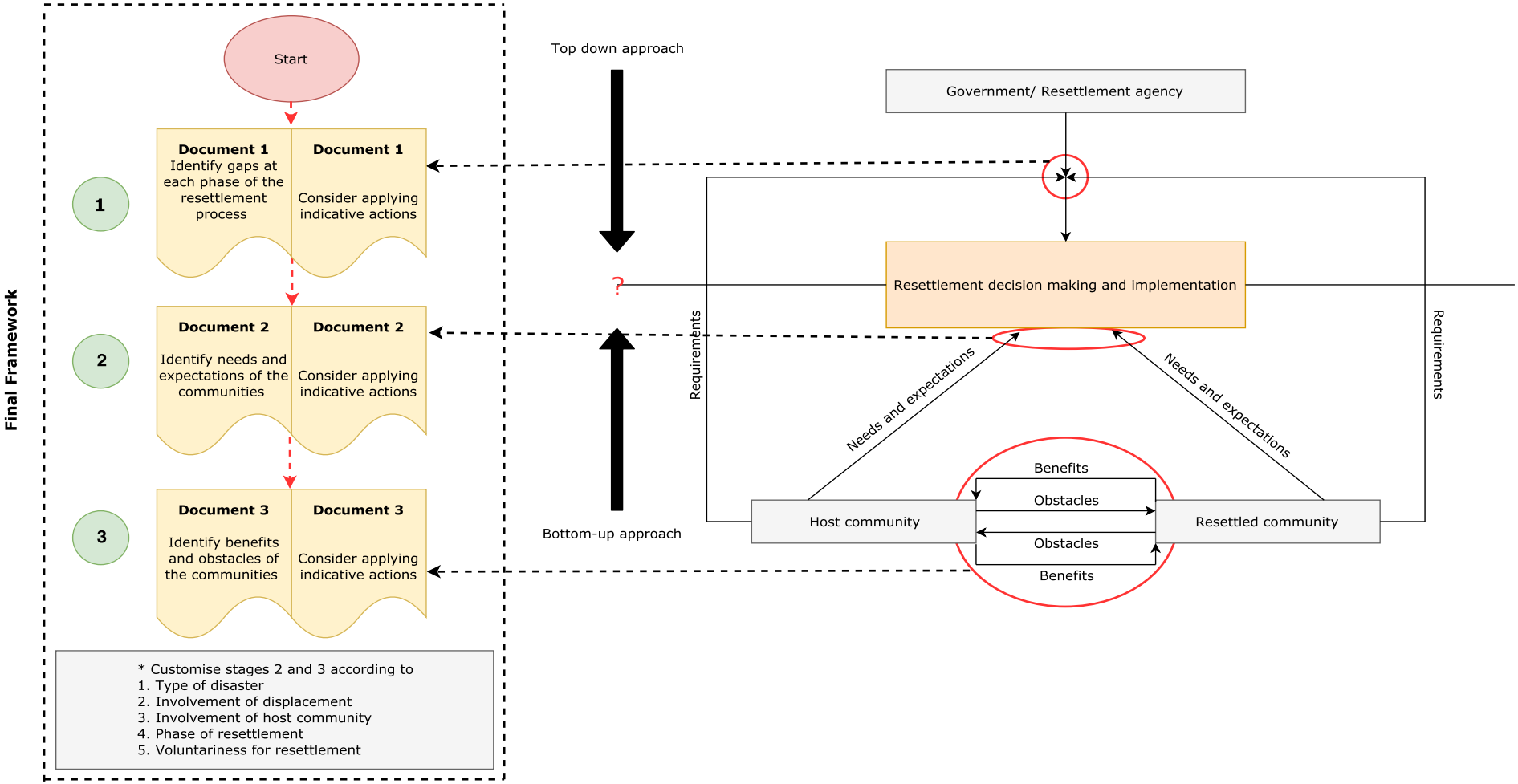


Figure 76: Evolution of final framework from the conceptual framework

Document 1: Gaps and barriers in the resettlement process and indicative actions

1. Preambles

1.1 Document 1 is the first part of the framework presented in Figure 76 that provides the stages of the resettlement procedure, and the gaps identified at each stage. This document further provides indicative actions for each identified gap. The purpose of this document is to recognise the stages of resettlement and actions that need to be considered at each stage to enhance the resettlement process.

1.2 The targeted audience of this framework are government officials, policymakers, experts and resettlement agencies involved in the planning and implementation of resettlements.

1.3 This document is expected to be read along with the framework. The readers are expected to know the basic procedures of resettlement planning and implementation.

2. Stages of resettlement process

2.1 The general stages of resettlement are listed below.

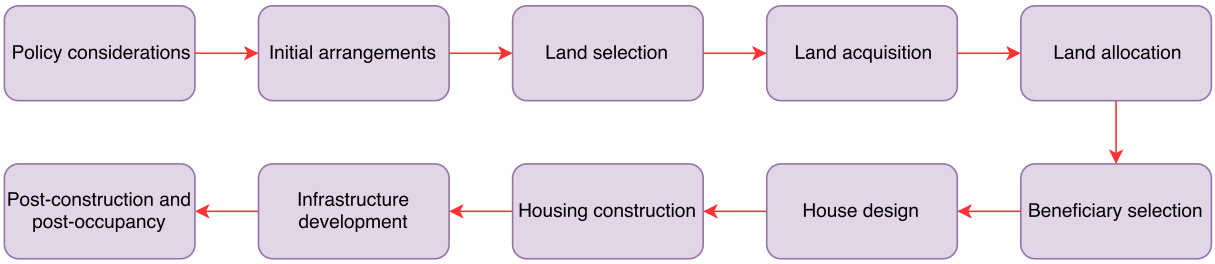


Figure 1.2.1: Stages of resettlement

2.1.1 Policy considerations: Policies related to the resettlement project and legal requirements shall be identified to recognise reservations and restrictions on the lands, housing rights, and minimum standards.

2.1.2 Initial arrangements: Initial arrangements mainly include defining and assigning institutional responsibilities, appointing steering committees, allocating reasonable time and budget for the process, and providing temporary shelters as applicable.

2.1.3 Land selection: Criteria for land selection shall be developed based on the identified policy requirements. Land availability and socio-economic context of the beneficiaries also have an impact on the land selection criteria.

2.1.4 Land acquisition: Once the land is selected for resettlement, land acquisition procedure shall be followed. If the government prefers to use state-owned lands for resettlement, land acquisition procedure is not required.

2.1.5 Land allocation: Depending on the availability of funds and number of allocated beneficiaries, the land shall be divided and allocated for housing construction

2.1.6 Beneficiary selection: Based on predefined criteria, beneficiaries for the allocated lots shall be selected.

2.1.7 House design: House design shall be decided based on the legal security of tenure, availability of services, materials, facilities and infrastructure, affordability, habitability, accessibility, location, and cultural adequacy.

2.1.8 Housing construction: This stage mainly includes procurement of materials, appointment of contractors, and construction of houses.

2.1.9 Infrastructure development: Based on the minimum standards and requirements, critical infrastructure shall be provided immediately after the housing construction. Other essential infrastructure also shall be developed in due course.

2.1.10 Post-construction and post-occupancy: Performance of the houses and satisfaction on the resettlement shall be monitored to identify lessons learnt and future references.

3. Gaps and barriers and indicative actions at each stage of the process

3.1 Gaps and actions at the policy consideration phase are presented below

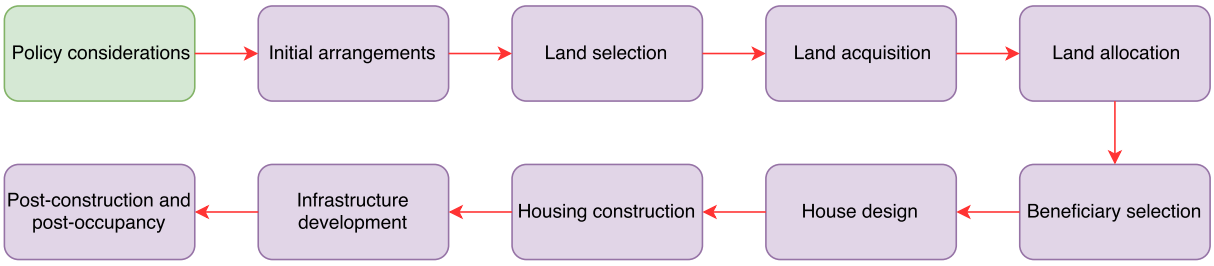


Figure 1.3.1: Policy consideration phase

3.1.1 Gaps and barriers at the policy consideration phase

a) Some policies and procedures impose practical difficulties in implementing owing to lack of coordination among implementation bodies

b) Contradictions among policy objectives create disputes in implementing

c) A well-formulated housing policy for Disaster-induced displacements and resettlements is not available in Sri Lanka

d) Too many guidelines for resettlement planning and implantation are available without adequate integration

e) Several institutional bodies of Sri Lanka retain resettlement powers at different stages

3.1.2 Indicative actions to overcome the gaps at the policy consideration phase

a) Create new recovery authority instead of using existing government organisations[1]

b) Define policies for disaster-induced resettlements and institutional mechanisms before disaster strikes

c) Define tailor made policies for disaster-induced resettlements

d) Integrate all guidelines by eliminating repetitions and contradictions

e) Identify all the stakeholders early in the project to understand their potential influence

f) Integrate participation of all the institutional bodies with local government[2]

g) Provide support and accountability from the central government

3.2 Gaps and actions at the initial arrangements phase are presented below

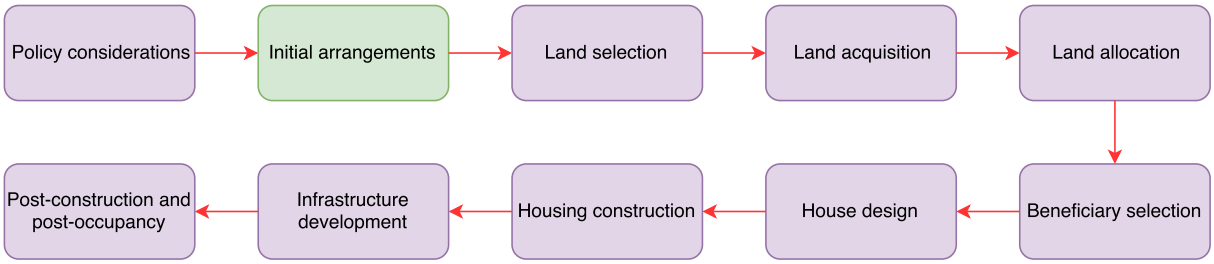


Figure 1.3.2: Initial arrangement phase

3.2.1 Gaps and barriers at the initial arrangement phase

a) Currently, resettlements are not considered as long-term developments in Sri Lanka

[1] Suitable for high-pressure situations that need fast process
[2] Lack of experts in the local government restricts the integration

b) Resettlement process is approached linearly by the implementation authorities

c) Resettlement funds are handles inefficiently in certain circumstances

d) The government and authorities are not prepared for resettlements as much as they are for disasters

e) Difficulties in the coordination and execution obstruct efficient implementation as responsibilities are assigned to different institutions

f) The sense of urgency, following a disaster, compels a rush in decision-making

g) Competition for power, influence, and corruption also are reasons for implementation issues

3.2.2 Indicative actions to overcome the gaps at the initial arrangement phase

a) Establish institutional mechanism, planning and coordination methods before operations begins

b) Identify potential influences, roles and responsibilities of stakeholders including funding bodies, local government, NGOs, and affected population

c) Develop agreement of work plan for each stakeholder based on the overall resettlement plan

d) Provide temporary shelter solutions based on a realistic assumptions about time[3]

e) Monitor the involvement of foreign NGOs with inexperienced staff in unfamiliar conditions that are vulnerable to corruption

f) Decentralise procedures with community participation

3.3 Gaps and actions at the land selection, acquisition and allocation phase are presented below

[3] Expect resettlements to take a long time and encourage communities to think in those lines

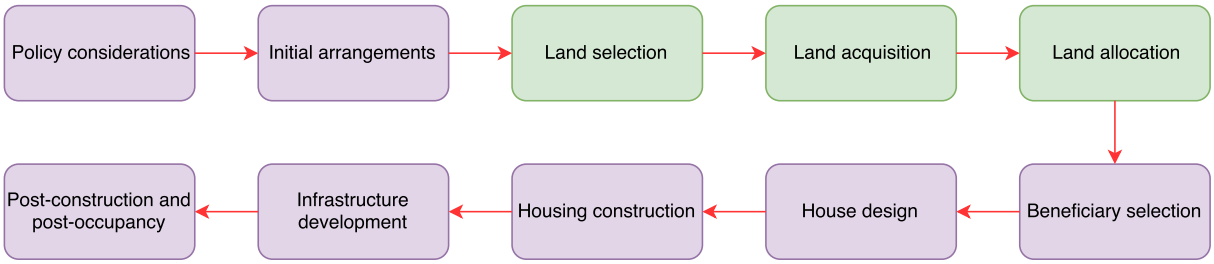


Figure 1.3.3: Land selection, acquisition and allocation phase

3.3.1 Gaps and barriers at the land selection, acquisition and allocation phase

a) The limited number of lands available for resettlement restrict officials from meeting all the criteria for land selection

b) The socio-economic conditions of the victims are often not addressed during the land selection

c) The suitability of location for the livelihood of the victims are not often considered

d) Land selection is challenging when urgency is a key factor

3.3.2 Indicative actions to overcome the gaps at the land selection, acquisition and allocation phase

a) Develop a database of available lands for resettlement including geographic and socio-economic features[4]

b) People who lives in medium-risk prone areas can be given an insurance policy rather than resettlement programmes

c) Identify the beneficiaries and potential host communities early in the project and understand their influence

3.4 Gaps and actions at the beneficiary selection phase are presented below

[4] NBRO is in the process of creating a land bank

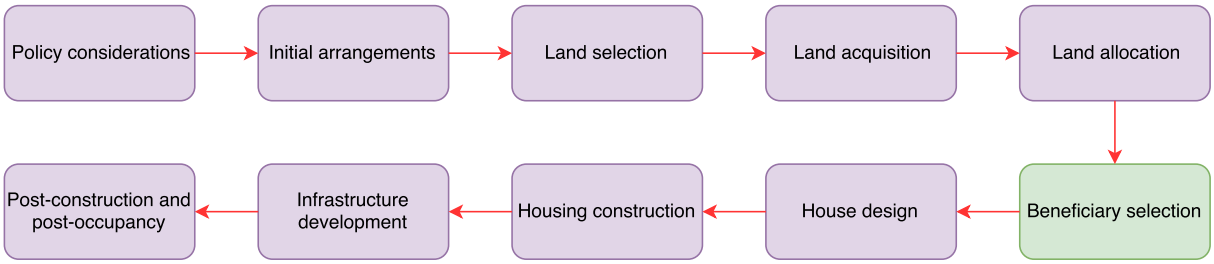


Figure 1.3.4: Beneficiary selection phase

3.4.1 Gaps and barriers at the beneficiary selection phase

a) Beneficiary selection criteria contain certain contradictions that restrict fair selection

b) The categories developed by the officials to define losses were somewhat arbitrary

c) The limited amount of funding makes officials face challenges in screening beneficiaries

d) Lack of available data to assess the beneficiaries

e) Some victims were reluctant to following procedure to apply for new houses

3.4.2 Indicative actions to overcome the gaps at the land selection phase

a) Collect data from secondary sources rather than depending on a single weighting system

b) Provide sufficient resources and administrative capacity to the implementation agencies

c) Define a tangible method for qualifying process

d) Define how the housing shortcomings will be addressed and provide appropriate funding

e) Consult community leaders and local authorities to identify deserving beneficiaries

f) Adopt suitable and trusted communication mechanisms

g) Involve beneficiaries in the resettlement process

3.5 Gaps and actions at the house design phase are presented below

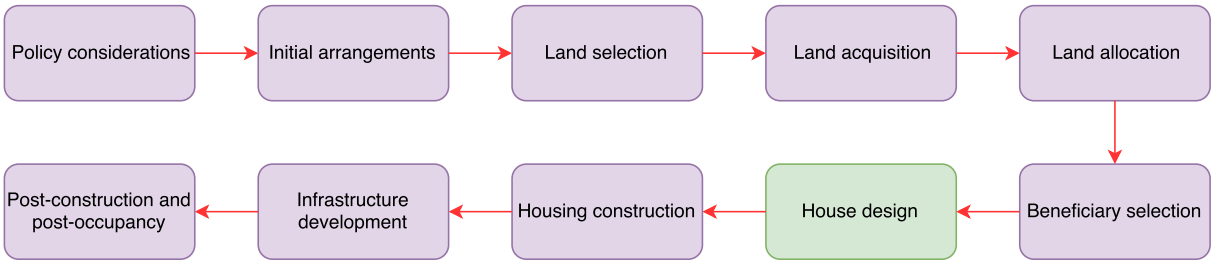


Figure 1.3.5: House design phase

3.5.1 Gaps and barriers at the house design phase

a) Two or three approved designs are repeatedly used in all resettlement programmes

b) Unavailability of special building codes for resilient resettlement

c) Designs do not allow provisions for future improvements

d) Inadequate consideration of social, economic, and cultural perspectives in design

3.5.2 Indicative actions to overcome the gaps at the house design phase

a) Define mechanisms to transfer lessons learnt

b) Consider complexity and impact of the disaster and sociocultural context of the beneficiaries for house designs

c) Propose special building codes including alternative technologies for resilient resettlements

d) Build a core house with minimum standards and allow space for future improvements

e) Incorporate feedback mechanism to improve reconstruction outcomes

3.6 Gaps and actions at the housing construction and infrastructure development phase are presented below

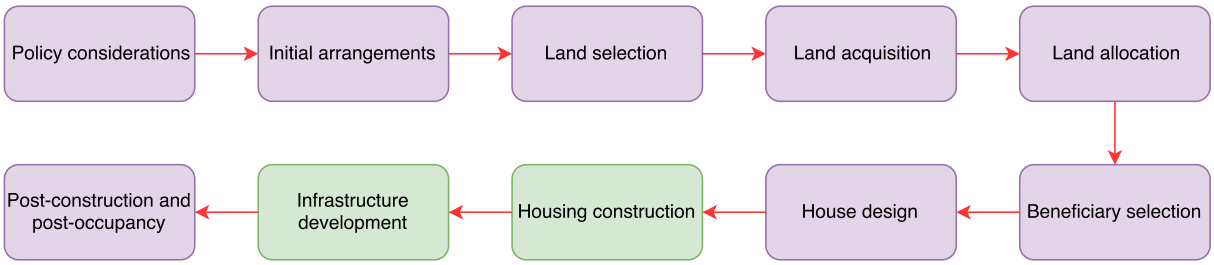


Figure 1.3.6: Housing construction and infrastructure development phase

3.6.1 Gaps and barriers at the housing construction and infrastructure development phase

a) Regular monitoring of the construction process is not followed in most of the resettlement programmes

b) Failure to monitor post-construction and post occupancy performance of the houses

c) Potential for further modifications or extensions are mostly ignored during the construction

d) Use of poor quality materials and workmanship caused incidence of some defects and early deterioration

e) Limited involvement of beneficiaries

f) Procedural and bureaucratic delays resulting from high-level meetings, an excess of procedures, and issues of coordination

3.6.2 Indicative actions to overcome the gaps at the housing construction and infrastructure development phase

a) Establish monitoring systems to understand the construction process undertaken by aid agencies

b) Incorporate feedback mechanism to improve reconstruction outcomes

c) Evaluate the outcome and update the policies and procedures

d) Build a core house with minimum standards and allow space for future improvements

e) Involve communities and monitor closely to avoid corruption

f) Adopt suitable and trusted communication mechanisms

g) Identify potential influences, roles and responsibilities of stakeholders including funding bodies, local government, NGOs, and affected population

Document 2: Needs and expectations of the communities and indicative actions

1. Preambles

1.1 Document 2 is the second part of the framework that provides the needs and expectations of the communities according to the context of the resettlements. This document further provides indicative actions for each identified expectations. The purpose of this document is to recognise the needs and expectations of the communities to provide an adaptable built environment.

2. Needs and expectations of the communities and indicative actions

2.1 The general needs and expectations of the communities are listed below.

a) Adequate physical and social infrastructure that supports the functionality of the community is a vital aspect of resettlement

b) Beneficiaries expect the government or the donor agency to assumes full responsibility for housing construction

c) The legal ownership of the property that allows renting, or selling the houses

d) Livelihood restoration or alternative employment opportunities are expected to be provided

e) Transparent resettlement process and beneficiary selection

2.2 Indicative actions for the general needs and expectations of the communities

a) Acknowledge the housing rights and provide special privileges for the beneficiaries[5]

b) Actions shall be taken to restore living standards by creating employment and livelihood opportunities

c) Avoid resettlements in distant locations to the beneficiaries' former locations as much as possible

d) Identify the need for livelihood assistance through a background study

[5] Providing housing rights may motivate the beneficiaries to make economic gain out of houses by selling or letting

e) Make the resettlement policy easy to understand and provide access to information

f) Ensure the communication with the implementation bodies is open

2.3 Context specific needs and expectations are listed below.

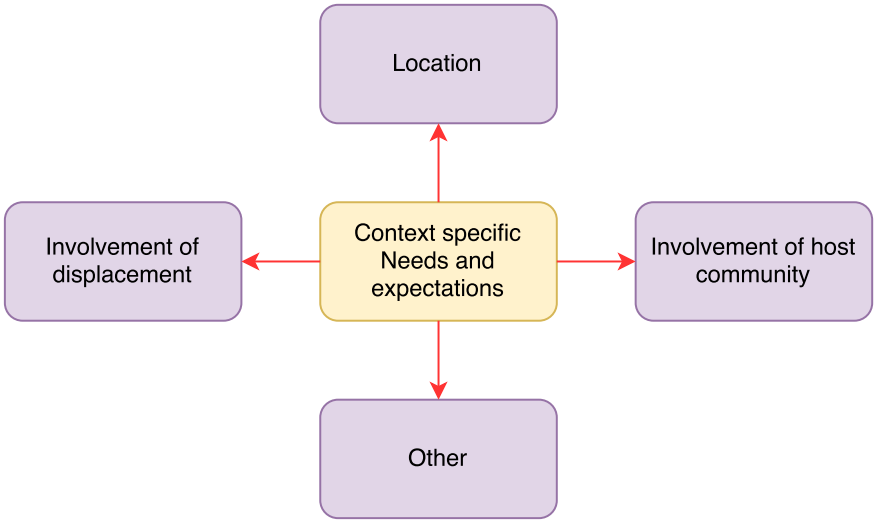


Figure 2.2.1 Context specific needs and expectations

2.3.1 Location-specific needs and expectations of the communities are listed below

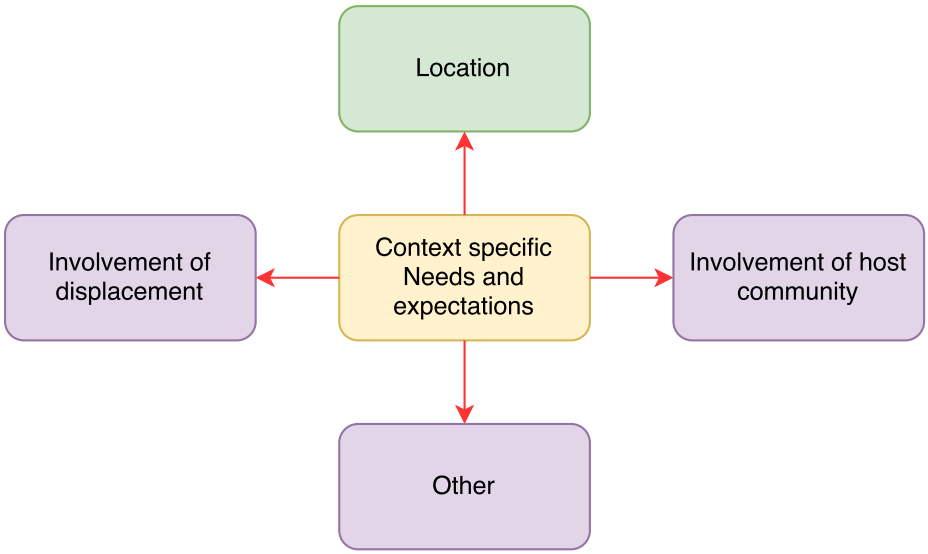


Figure 2.2.2 Location-specific needs and expectations

a) Comparatively spacious or detached houses are expected depending on the previous occupation of the beneficiaries. In some cases, the beneficiaries view the resettlement as a social upgrading programme

b) The primary expectation of any resettlement programme is to relocate victims to a safer location. This become critical depending on the location

2.3.2 Indicative actions for location-specific needs and expectations of the communities

a) Identify minimum standard as required by the regulations for the land selection[6]

b) Develop a database of available lands for resettlement including geographic and socio-economic features[7]

2.3.4 Needs and expectations of the communities based on the involvement of host community

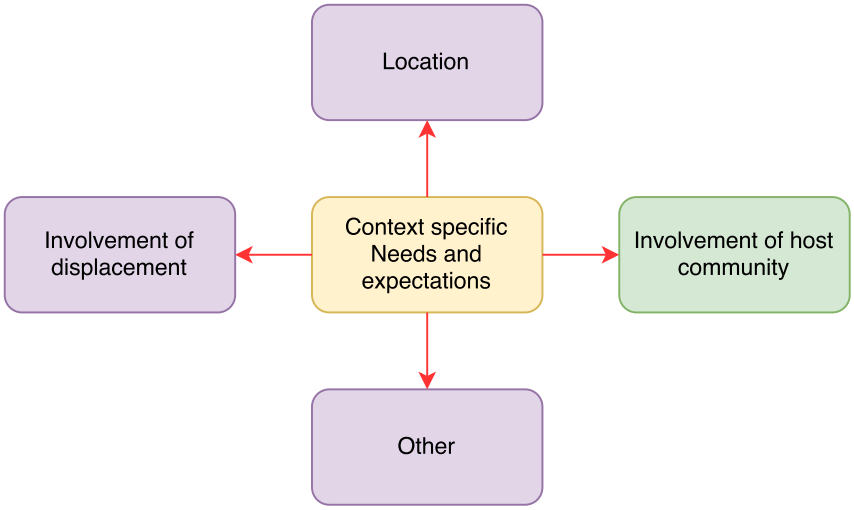


Figure 2.2.3 Involvement of host community

a) Communities indicate strong preference among beneficiaries to be resettled in populated locations

b) Parallel development activities for host communities including appropriate upgrading of infrastructure

c) Initiations of programmes for social cohesion is expected to ensure the cohabitation between communities

2.3.5 Indicative actions for needs and expectations of the communities with a host community

a) Develop a database of available lands for resettlement including geographic and socio-economic features

[6] It needs a location specific solution. No standard method can be followed
[7] NBRO is in the process of creating a land bank

b) Assure sufficient development is planned to cater both communities according to the minimum standard for public infrastructure

c) Plan and implement social cohesion programmes considering potential conflicts

2.3.6 Needs and expectations of the communities based on the involvement of displacement

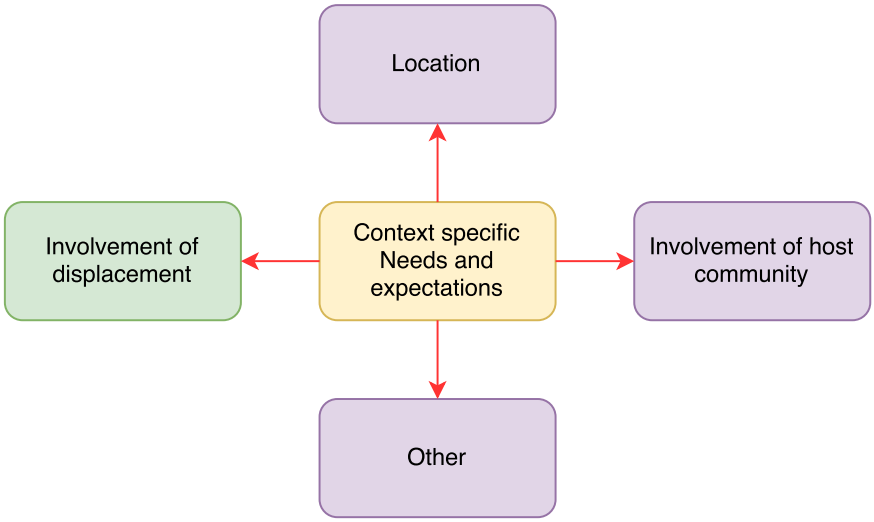


Figure 2.2.4 Involvement of displacement

a) Communities who are resettled directly without displacement expect to retain ownership of their unharmed previous houses

b) Communities who underwent displacement before resettlement expect compensation of their damaged houses

c) Communities who underwent displacement expect a speedier resettlement process

2.3.7 Indicative actions for needs and expectations of the communities depending on the involvement of displacement

a) Impose strict restrictions for selling and letting if the beneficiaries are allowed to retain their ownership of their previous houses

b) Implement a compensation procedure rather than providing an extra residence[8]

c) Provide temporary shelter solutions based on a realistic assumption about time[9]

[8] Contradicts with equity policy
[9] Expect resettlements to take a long time and encourage communities to think in those lines

2.3.8 Other needs and expectations

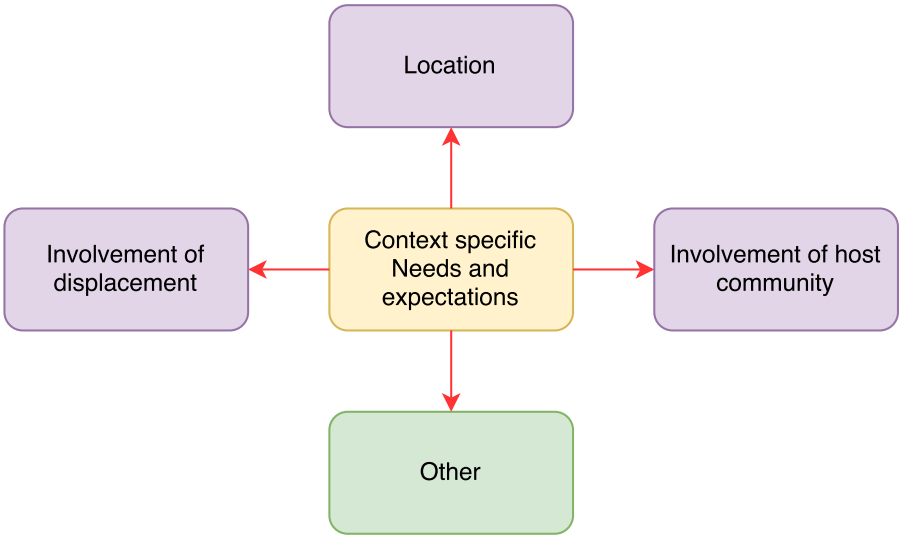


Figure 2.2.5 Other needs and expectations

a) Communities expected the houses to be culturally appropriate

b) Comparatively larger land plots are expected by the communities

c) Communities expect customised houses according to their specific needs such as number of family members, and livelihood.

2.3.8 Indicative actions for other needs and expectations

a) Involve local practitioners in designing the houses[10]

b) Identify minimum standard as required by the regulations[11]

c) Consider post occupancy monitoring and future assistance

d) Provide necessary technical and financial assistance

[10] This is a drawback of donor-driven housing construction. Provide maximum support and minimum intervention for the communities

[11] It needs a location specific solution. No standard method can be followed

Document 3: Favourable and unfavourable conditions of the communities and indicative actions

1. Preambles

1.1 Document 3 is the third part of the framework that provides the benefits and obstacles of the communities according to the context of the resettlements. This document further provides indicative actions for each identified obstacles. The purpose of this document is to recognise the benefits and obstacles of the communities to provide an adaptable built environment.

2. Favourable conditions of resettlement

2.1 General favourable conditions of the resettlements are listed below

a) Resettled communities value access to basic amenities like drinking water and electricity at the location

b) Communities who had no alternatives until receiving resettlement houses identified possession of a permanent house as a favourable condition

c) Proximity to a school is stated to be a favourable condition

d) Communities usually prefer to live among or near a host community as it makes them feel physically, emotionally and spiritually safe

2.2 Favourable condition of the communities in the resettlements with adequate funding

a) Relatively spacious and adequate extent of land and houses are identified as favourable condition of the resettlements which were supported by massive aid and relief funds

2.3 Favourable conditions of the communities with host communities

a) Financial support given to the host communities for housing development is a positive factor

b) Good relationship with the host community is identified as a favourable condition by resettled communities living with a host community

2.4 Favourable conditions of the communities based on the phase of the resettlement

a) Recently resettled communities identify newness of the houses as a positive factor

b) Receiving a permit that accredits occupancy is a favourable condition for more recent settlers

c) Availability of essential infrastructure including flood mitigation systems, streetlights, drainage systems, better transport facilities, and frequent garbage collection is a favourable condition for long-term settlers

2.5 Favourable conditions of the communities based on the involvement of displacement

a) Communities continuing to live in disaster-prone zones is indicative of unfavourable conditions in their current location as an attraction for resettlement

b) A safe location is identified as a favourable condition by the people who faced disaster and displacement

2.6 Favourable condition of the communities based on the voluntariness for resettlement

a) Land ownership is referred to as a favourable by communities that had volunteered to resettle in their formally owned lands

b) A location which is near the settlers' former location is a favourable condition for the communities with livelihood associated with their location

2.7 Other favourable conditions

a) Comparative improvements in housing

b) Proximity to town centre, place of worship, and main road

c) Land with fertile soil for cultivation

3. Unfavourable conditions of resettlement and indicative actions

3.1 General unfavourable conditions of the resettlements as identified form the case studies are listed below

a) Inadequate social infrastructure is an unfavourable condition for the communities. Resettling people in a different location results in social disarticulation as communities lose access to their natural resources and their capacity to develop a social infrastructure

b) Difference usage of land after resettlement gives unfamiliar meaning to the people who are reluctant to abandon their lifestyle

c) Inadequate basic amenities including drinking water, electricity, gas, and telephone, and the ability to pay and sustain these amenities are noted as unfavourable conditions

d) Beneficiaries are often critical of such houses for their inappropriate design, materials and technology

e) A location is often associated with social attachment, livelihood and culture of a community, and hence an unfamiliar location can affect communities negatively

f) Resettled communities recognise inadaptability of the houses as a serious obstacle to adapting to a new built-environment

3.2 Indicative actions to mitigate general unfavourable conditions

a) Develop minimum standards for infrastructure provisions in proportion to the population increase

b) Consider landscapes similar to the beneficiaries' previous occupation[12]

c) Incorporate infrastructure plan to the housing design

d) Decentralise procedures with community participation

e) Develop a database of available lands for resettlement including geographic and socio-economic features[13]

f) Build a core house with minimum standards and allow space for future improvements[14]

3.3 Context specific unfavourable conditions are listed below.

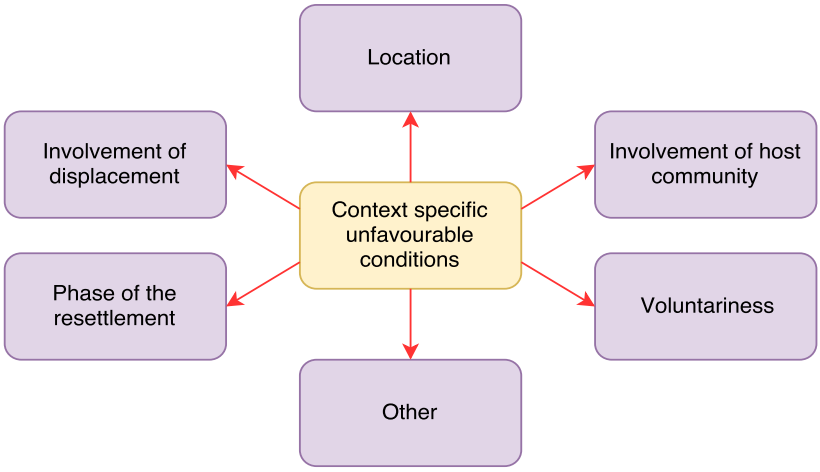


Figure 3.3.1 Context specific unfavourable conditions

[12] It needs a location specific solution. No standard method can be followed
[13] NBRO is in the process of creating a land bank
[14] Depends on the allocated financial assistance and beneficiaries' ability

3.3.1 Unfavourable conditions for resettlements with host community

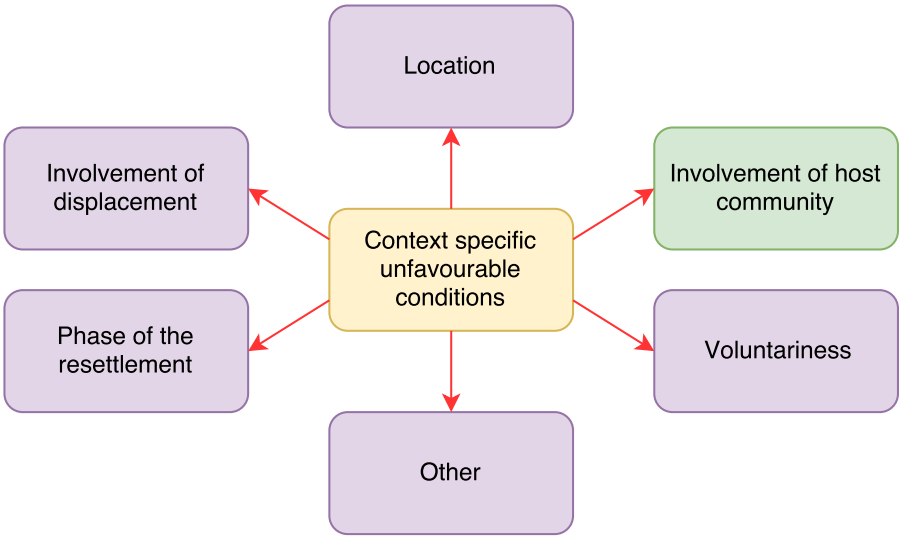


Figure 3.3.2 Involvement of host community

a) Unpleasant community relations constitute a latent issue of host communities that influences their inadaptability to the built-environment

3.3.2 Indicative action to mitigate unfavourable condition for resettlements with host community

a) Plan and implement social cohesion programmes considering potential conflicts

3.3.3 Location-specific unfavourable conditions for resettlements

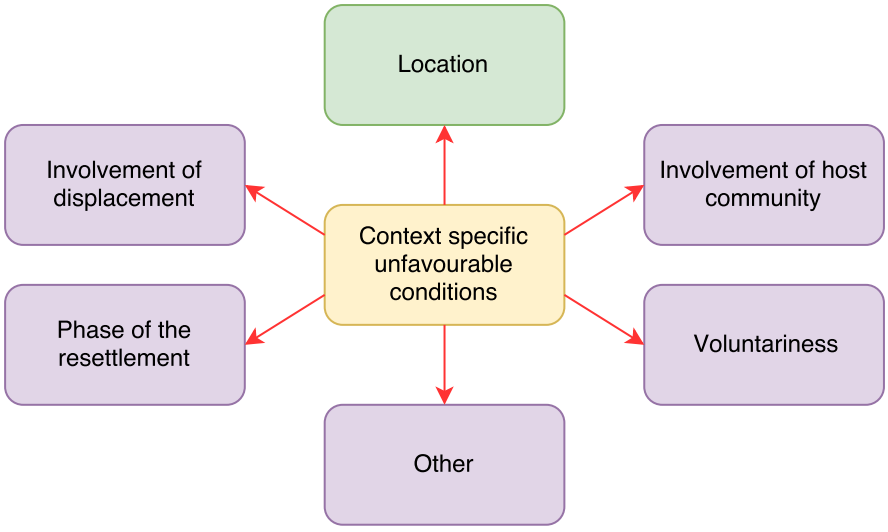


Figure 3.3.3 Location-specific unfavourable conditions

a) Resettlement location prone to floods, soil erosion and other hazards is an unfavourable condition

b) Landslide-affected community expects more safety features than the tsunami and conflict-affected communities. Because, comparatively, the likelihood and frequency of a landslide is high

3.3.4 Indicative actions to mitigate location-specific unfavourable conditions for resettlements

a) Develop a database of available lands for resettlement including geographic and socio-economic features

b) Provide adequate safety measures

3.3.5 Unfavourable conditions for resettlement depending on the phase of the resettlement

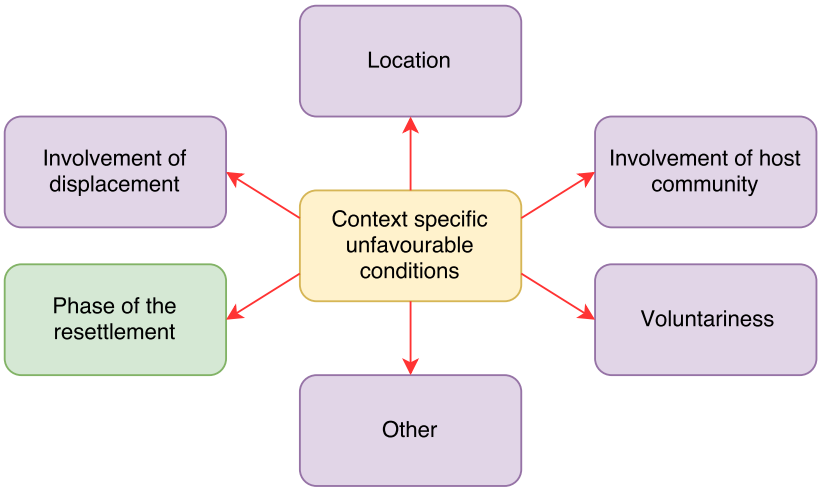


Figure 3.3.4 Phase of resettlement

a) Absence of legal ownership is seen as an unfavourable condition by the long-term resettlement communities

b) Undefined boundaries is an unfavourable condition for communities representing recent resettlements

c) Unsuitability of the land for the livelihood and other activities of the resettled community is an unfavourable condition for the new settlers

3.3.6 Indicative actions to mitigate unfavourable conditions for resettlements depending on the phase of the resettlement

a) Acknowledge the housing rights and provide special privileges

b) Consider boundary demarcation before handing over the houses

c) Initiate actions to restore living standards, avoid resettlement in distant locations, and identify the need for livelihood assistance

3.3.7 Unfavourable conditions for resettlement depending on the involvement of displacement

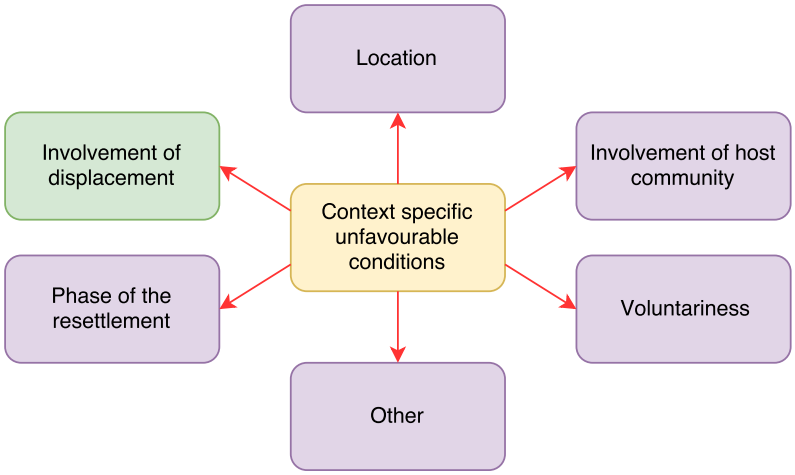


Figure 3.3.5 Involvement of displacement

a) Beneficiaries of direct resettlement expect a house that would accommodate all their belongings. Thus, houses which are too small to accommodate all their furniture is seen as an unfavourable condition

b) Long time taken for resettlement is an unfavourable condition for the communities in temporary shelters

3.3.8 Indicative actions to mitigate unfavourable conditions for resettlements depending on the involvement of displacement

a) Satisfy minimum housing standards

b) Provide temporary shelter solutions based on a realistic assumptions about time[15]

[15] Expect resettlements to take a long time and encourage communities to think in those lines

3.3.9 Unfavourable condition for resettlement depending on the voluntariness

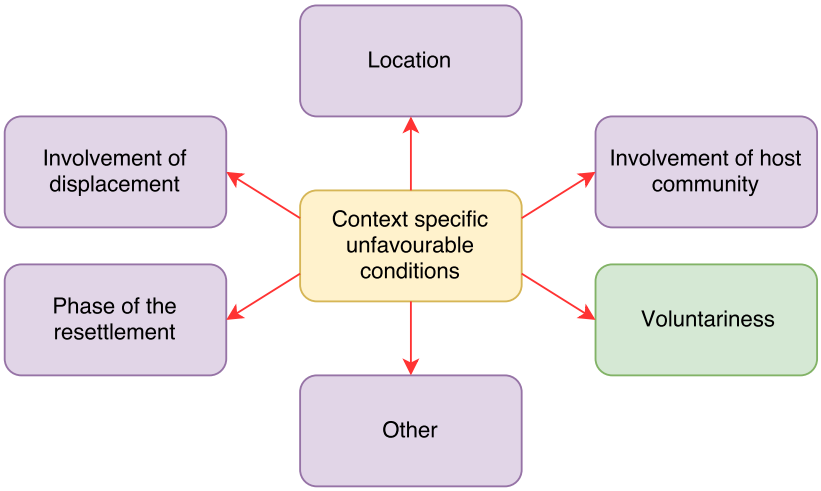


Figure 3.3.6 Voluntariness

a) A tendency of the communities relying on a nearby neighbourhood for various activities found that the continuity of this social network was disrupted following resettlement. Involuntary settlers prioritised this issue more than voluntary settlers

3.3.10 Indicative action to mitigate unfavourable conditions for resettlements depending on the voluntariness

a) Consider resettling families and neighbours around

3.13 Other unfavourable conditions

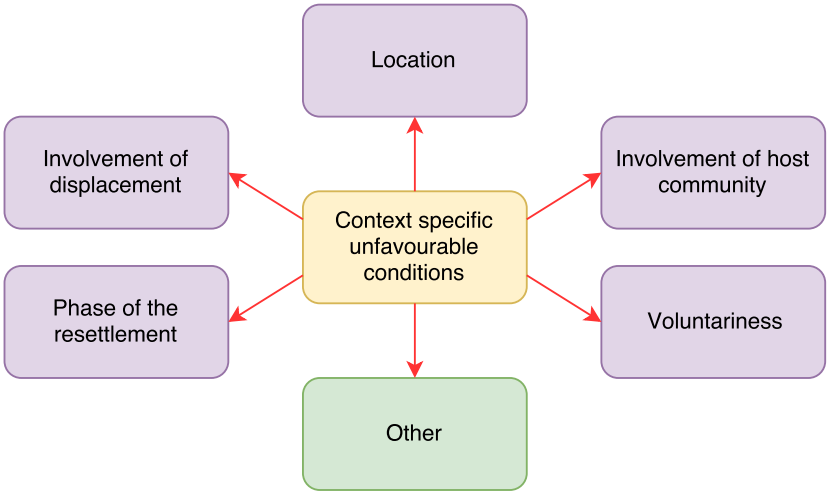


Figure 3.3.7 Other unfavourable conditions

a) Inability to extend the houses

b) Climate inadaptability of the houses

3.14 Indicative action to mitigate other unfavourable conditions

a) Consider post occupancy monitoring and future assistance

b) Operationalise local knowledge and involve local practitioners[16]

[16] These are the drawbacks of donor-driven housing construction. Provide maximum support and minimum intervention for the communities

8.4 Validation of the findings

Validation has different ranges of meaning in different disciplines and is tested accordingly. In the field of empirical social research, four tests are commonly used to establish the validity of findings (Yin, 2014), namely construct validity, internal validity, external validity, and statistical validity. Nanda, Rivas, Trochim, and Deshler (2000) explain construct validity as a process of assessing appropriateness to a simplified version of a problem that is actually answerable. One of the principal research questions of the study is "Why do post-disaster resettlements often end up in dissatisfaction?" The underlying mechanism of resettlement dissatisfaction (see Figure 75) answers this question based on empirical findings. However, this simplified version has to be tested for validity before recommending solutions. Thus, construct validity was tested by means of a series of expert interviews. Internal validity was not tested as Yin (2014) explains that it is inapplicable to descriptive or exploratory studies.

External validity has been tested for the findings by exploring their applicability of the final framework for wider contexts within Sri Lanka. Five experts, all experienced in the field of resettlement and disaster management in Sri Lanka, were selected for the validation process. Table 40 shows the profiles of the experts.

Table 40: Profile of experts

Expert no.	Description
VE1	Scientist at a building research organisation
VE2	Higher level officer of a government authority related to resettlements
VE3	Scientist at a building research organisation
VE4	Higher level officer of corporate division at a building research organisation
VE5	Senior lecturer with a research expertise in resettlements

8.4.1 Validation of underlying mechanism

Each feature of the underlying mechanism was explained to the experts, and their views and consent to the features were noted for further modification. All experts expressed fundamental agreement, and agreed specifically on most of the features. Important improvements suggested by them are discussed below.

All experts agreed that the underlying mechanism presented explains resettlement failure or dissatisfied end-users of resettlements. VE2, VE4, and VE5 recommended the use of this model as a base to justify resettlement dissatisfaction where it could assume different dimensions in different contexts. VE2 observed that *"the level of desire will not be linear during the displacement period if it lasts for a long time."* VE2 added that if displacement lasts for too long, victims lose faith in the system and their desire to possess a house would slump. It may, however, revive owing to the severe conditions in temporary shelters. Such fluctuation was noted to occur to small degree in cases where disaster victims who lived in temporary shelters for prolonged period staged protests, demanding a speedier resettlement process. All other experts agreed that, where the displacement period is within accepted norms, the desire to possess a house will be at a high level as the victims, at this phase, desire a permanent solution.

VE5 observed that that the level of desire of the disaster victims to possess a house may vary with their wealth. The level of desire of victims who are multiple landowners or are wealthy enough to build a house themselves will not be similar to that of chronically poor victims. Thus, the level of desire may vary depending on financial status. However, the findings showed that the victims who desired donor-driven housing solutions mostly represented the poorer segments of society. The study conducted in post-earthquake Gujarat by Thiruppugazh (2016) agrees with this, noting that communities below poverty line, the landless and backward preferred NGOs to build houses, while large farmers, big families, and those above poverty line preferred to build houses on their own. Since the present study focuses on the donor-driven housing reconstruction, it is reasonable to assume that the beneficiaries represent the most deprived layers of society. Thus, their desire to possess a house will be at a high level during the displacement phase.

VE5 further observed that undesirable conditions in the temporary shelter is one of the reasons why the desire to possess a house is high during the displacement period. This view is consistent with that of VE2 as explained in the previous paragraph. The present study has in its case study analysis taken into account evidence of a variety of undesirable conditions in temporary shelters. It was also noted that, on the other hand, there was evidence that the number of people living in temporary shelters and claiming houses increased unexpectedly in some cases, because people unaffected by disaster also moved into temporary shelters for the purpose of getting a new house. This shows that the desire was prompted not only by the undesirable conditions in the temporary shelters. However, it remains a attracting factor towards a resettlement programme.

The validation process of the simplified model of the problem shows that the model is usable as a base and be modified appropriately by adding or removing context specific factors.

8.4.2 Validation of the final framework

The second research question of this study is: "How best can an effective recovery within the Sri Lankan post-disaster resettlement programmes be potentially achieved through providing an adaptable built-environment." Accordingly, this study identifies the current resettlement process together with the communities' perceptions to determine the gaps. Based on the determination, it proceeds to define the underlying mechanism of the resettlement dissatisfaction and address it through a strategic-level framework shown in Figure 76 and following documents. Essential notes and comments of the experts are discussed as follows.

Note 1: VE5 notes that resettlements in various contexts such as urban housing resettlements, disaster-induced resettlements, conflict-induced resettlements, estate housing resettlements, fishery housing resettlements are handled by five (05) different ministries in Sri Lanka. Thus, creating a new recovery authority under each ministry is somewhat unmanageable. New authority can be created in instances where a faster process is required.

Note 2: VE1 states that lack of crew with relevant expertise within one institution makes the government to handover different responsibilities to different institutional bodies. On the other hand, VE4 notes that the resettlement involves several procedures and some take a long time such as land acquisition. Hence, integrating relevant bodies may make the process faster and efficient. However, this needs a rigorous mechanism for better coordination.

Note 3, 9 and 15: According to VE2, resettlements procedure is a time taking procedure. Housing construction itself takes at least three months. Therefore, the victims have to be adequately communicated and encouraged to accept the fact. The sense of urgency can be managed by providing adequate temporary shelter solutions.

Note 4, 7 and 13: VE1, VE2, VE3, and VE5 state that the NBRO is in the process of creating a land bank by compiling available lands for resettlement with all demographics, and socio-economic details. This database will reduce the time spent on land selection for future resettlement programmes.

Note 5: Although restrictions in providing legal ownership is noted as an issue by the beneficiaries, underlying mechanism of resettlement failure shows that a free asset would

tempt the beneficiaries to make economic gain out of houses. VE2 sees this as a function of surplus compensation. VE2 further states that the recipients will find it profitable to sell or let if the given facility is expensive to hold and maintain. As Sri Lankan government assumes social upgrading as one of the objectives of resettlement, restricting legal rights will prevent the recipients from making economic gain out of the houses.

Note 6, 11 and 12: Experts agree that the minimum standard for land allocation has to be followed. However, VE2 states that the land is one of the major scarce resources. Thus, a standard size of a land plot for resettlement cannot be defined. Depending on the land availability of the location it can be decided. This difference can be observed in case study findings as well. Tsunami-resettlement beneficiaries were allocated 15 perches per person, whereas landslide resettlement beneficiaries were allocated only 7 perches per person.

Note 8: VE1 notes that as a policy Sri Lankan government follows equity which considers all the victims on the same scale. Findings also endorse that value of the loss is one of the beneficiary selection criteria, but beneficiaries' wealth and multiple ownership of lands are not considered presently. On the other hand, VE2 and VE5 state that consideration of previous financial status would allow the government to identify the most deserving beneficiaries.

Note 10 and 16: Climate inadaptability and cultural mismatch of the houses are the common disadvantages of donor-driven houses. VE2 and VE3 suggest that community involvement with minimum intervention and maximum support would be a solution for this issue.

Note 14: VE2 emphasises that there are instances where the beneficiaries completed houses in inappropriate ways. Thus, providing core-house is valuable if adequate financial and technical support is given to the recipients. However, VE2 and VE5 accept that house is a process rather than a product, and the requirements and expectations of each are different. Hence, the core-house system is a suitable method if it is provided with all the assistance for successful implementation.

8.5 Links among conceptual framework, underlying mechanism and the framework

The conceptual framework (See Figure 6) shows that there are gaps and barriers in the top-down procedure and bottom-up perceptions that need reconciliation to improve the longevity of resettlements. The empirical study is conducted to identify the said gaps. Based on the analysis the underlying mechanism of the resettlement dissatisfaction (See Figure 75) is determined. This model shows that the desire to possess a house declines at the normalisation phase when the recipients start adjusting to the new environment. The

five recognised reasons were expanded and logically presented in the final framework (see Figure 76). The framework explains the gaps and barriers in the top-down procedures and unfavourable consequences from the bottom-up perception. The target audience of this framework is the government, policymakers, and implementation agencies of resettlement who make strategic level decisions. This framework answers the research questions why do resettlements end up in dissatisfaction and how best an effective recovery can be achieved. The suggested indicative actions are not definite and shall be modified based on the context of the resettlement as classified in Chapter 7, Section 7.5.

8.6 Summary and the link

This section summarises the findings of the study linking with the research problem and conceptual framework. The findings were organised logically in the format of a framework that enables the enhancement of the resettlement process. The chapter further explains the validation process that is performed to ensure the credibility of the findings. Given that, the next chapter concludes the study with recommendations.

Chapter 9 : Conclusions

Having discussed the findings and outcomes of the study in Chapter 8, attempt is made in this chapter to draw conclusions based on the findings. The research context and the problem are summarised, and are followed by the conclusions drawn based of the findings and a statement of the potential contribution of the research to theory and practice in resettlement studies. They are followed by comments on the limitations of the research and prospects for further research.

9.1 Summary of the research problem and its context

The 'global refugee crisis' has grown to massive proportions in recent decades to demand the world's attention and has thus led to various declarations and policy changes. Meanwhile, a growing number of internal displacements occur across the globe without attracting much international notice. As a result, particularly in the developing countries, resettlements are implemented by concerned organisations to mitigate the consequences. Nevertheless, large-scale resettlement schemes have been much criticised for their inability to satisfy the long-term aspirations of the resettled communities. Thus understanding the role of the built environment in resettlements and its impact on the recovery of the displaced community is an issue of particular concern to the present study.

This study inquires into the available institutional arrangements consisting of the top-down approach and the bottom-up approach, to find affordable solutions. Thus, it comprises an attempt to establish a middle ground by minimising the negative aspects of both forms of institutional arrangement. Hence, the aim of the research is to propose a framework to augment the 'post-disaster resettlement' process by identifying the gaps in the resettlement process and its outcome to resolve built environment related issues within disaster-induced resettlements. The aim of the study was pursued in terms of the following five objectives: 1. Explore the gaps in current procedures and policy requirements that are followed by the Sri Lankan government/ resettlement agencies during planning and implementation of resettlements, 2. Compare and contrast both host and resettled communities' built environment related expectations and needs concerning resettlement, 3. Evaluate the existing built environment related challenges and obstacles that are faced by the resettled communities and their host communities, 4. Establish the gaps in the top-down procedures and bottom-up perceptions, 5. Develop a framework to enable enhancement of post-disaster resettlement process through adaptable built-environment. In order to understand the process of resettlement, there was need to select a particular developing country so that there is coherence in the approach to addressing issues. Thus, Sri Lanka was selected to study the resettlement process for the purpose of this research

for the following reasons, explained in greater detail in Section 2.4: Sri Lanka has decades of varied experience in displacement and resettlement arising from both armed conflict as well as natural disaster, several Sri Lankan case studies report slow recovery of resettlements, as a result of built-environment and community adaptability issues, and 45,000 displaced people are yet to be resettled in Sri Lanka.

9.2 Summary of key findings

The key research findings based on the objectives are summarised below under each objective.

9.2.1 Objective 1

The first objective of the study was to explore the gaps in current procedures and policy requirements followed by Sri Lankan government and/or resettlement agencies during the planning and implementation of resettlement. The objective was framed to identify, from the top-down perspective, gaps and barriers in the resettlement process. Gaps and barriers were identified at each stage of the resettlement process, using expert interviews and document review as the techniques to achieve the objective. The findings related to this objective, discussed in Chapters 4, 6 and 7, are summarised below:

The findings revealed that initial arrangements, land selection, land acquisition, land allocation, beneficiary selection, house design, house construction, post-occupancy evaluation, and infrastructure development comprised the basic steps of resettlement, carried out in various sub-stages determined by the context. The analysis identified gaps and barriers at each stage with negative consequences for the outcome. At policy level, the powers assigned to several statutory bodies, and the existence of an excess of guidelines contributed to drawbacks in effective implementation. Further, contradictions in policy objectives, the absence of well-formulated housing policies for DIDR, and practical difficulties in policy implementation are among other gaps at the policy level.

The results showed that the resettlement process ended with the handing over the houses, pointing to the treatment of the resettlement process as a linear process. It was further found that the sense of urgency following a disaster forces a rush in decision-making, so that officials view resettlement merely as a process of providing lands and houses. The sense of urgency, competition for power, influence, and corruption, and careless handling of funds are among serious gaps identified in the implementation process. Besides, the land selection process was found to be lacking in efficiency owing to the sense of urgency, a limited number of available lands, socio-economic conditions of the beneficiaries, and issues of suitability of the location. The beneficiary selection process too was found to be

lacking in efficiency owing to limited house offers, contradictions in criteria, lack of data, and the reluctance of the beneficiaries.

At the house design phase, repeated use of the same house design, inadequate consideration of social, economic, and cultural perspectives, unavailability of special building codes for resettlements, and absence of provision for future house improvement are among prominent criticisms. Housing construction, comprising one of the most critical phases of resettlement, also was found to show some gaps with negative impact. Limited involvement of beneficiaries, irregular monitoring of the construction process, poor quality of materials and workmanship, unavailability of space for expansion, and procedural delays are among gaps in the construction phase. Besides the said gaps in each stage, other concerns relating to the top-down approach were also identified. Delays in the issue of deeds is one such concern that emerged from the analysis. Lack of dedicated funds for surveying, the government's fear of potential abandonment, land encroachment, and procedural delays contributed to this concern. Inadequate community consultation was also observed as an important concern. Involuntariness of the people, a culture of dependency, lack of coordination among institutions, limited availability of lands and funding were among the reasons for it.

The findings of the study, however, show that the resettlement process has improved very much since the time of 2004 Indian Ocean tsunami. There are, nevertheless, some gaps in the current procedure arising from the top-down approach and issues related to such approach. Also, an examination of the findings in the context of the literature review showed that the issues faced by other developing countries have much in common the case studies in this work, including several serious gaps and barriers identified in Sri Lanka's top-down process.

9.2.2 Objective 2

The second objective of this study was to compare and contrast the built-environment related needs and expectations of both host and resettled communities regarding resettlement, from the perspectives of two communities. The motive was to identify the alignment between what was anticipated and what was provided. Needs and expectations were identified using semi-structured interviews within the case study boundary. The findings related to this objective, discussed extensively in Chapters 6 and 7, are summed up below.

Although the results revealed that needs and expectations would vary depending on specific context, the findings show that adequate physical and social infrastructure, completed donor-built houses, ownership of the lands and houses, livelihood restoration,

alternative employment opportunity, and transparent resettlement process were among the needs and expectations of the resettled communities across cases.

Spacious detached houses and safe location are location-specific expectations indicated by the respondents (see Table 37). Among landslide victims, who were mostly traditional tea plantation workers who lived in line-houses, beneficiaries expected social upgrading and a better standard of living, and detached houses were a priority to the landslide victims. Safe location was a common expectation for the communities in settlements located in flood-prone and landslide-prone zones. The cases studied included resettlements among a host community as well as new developments, and results show that in resettlements in populated location, parallel development activities for the host community and social cohesion programmes were among the expectations of the settlers.

It was found that the communities in resettlements that did not involve displacement expected to retain ownership of their unharmed houses, while communities who suffered displacement expected compensation for their damaged houses and speedy resettlement. Location with easy access to the nearest town, culturally appropriate houses, large plots of land, and customised houses addressing specific needs of the beneficiaries were among other expectations expressed by the settlers.

Cross-case analysis showed that the needs and expectations of the communities vary with specific parameters such as type of disaster, involvement of host community, phase of resettlement, involvement of displacement, and voluntariness for the resettlement. The analysis further showed that several of the empirical findings replicate the findings in similar contexts reported in the literature.

9.2.3 Objective 3

The third objective of the study was to evaluate the existing built environment related challenges and obstacles faced by the resettled communities and host communities. This objective was formulated to identify, verify and validate the challenges and obstacles faced by the communities in the resettlements. The challenges and obstacles were identified using a questionnaire survey and semi-structured interviews within the case study boundary. The findings relating to this objective as discussed in Chapters 5, 6 and 7 are summed up below.

The survey results showed that inadequate social infrastructure, difference in land usage, and inadequate basic amenities are among identified latent factors common to both resettled and host communities. Unfamiliar location, unfamiliar house design, and inadaptability of the houses were obstacles specific to resettled communities, while

unpleasant community relation was an obstacle specific to the host community. The case studies yielded findings affirming the survey results.

The case study results identified proneness of the location to floods, soil erosion, and other hazards as a location-specific unfavourable condition. Besides, the lack of safety features was stated as an unfavourable condition by landslide-affected communities as the likelihood and frequency of a landslide is high in the region. While lack of legal ownership was an important unfavourable condition for long-term settlers, undefined boundaries and unsuitability of the land for the livelihood and other activities were among unfavourable conditions for recent settlers.

Some of the case studied were direct resettlements, and people had time to plan and organise their resettlement as well as think of the resettlement in future terms. Thus, the beneficiaries noted, for example, that the houses were too small to accommodate their furniture and considered it among unfavourable conditions, including inability to extend the houses and climate inadaptability of the houses. Further, the involuntary settlers among them who relied on neighbouring areas for various activities found that the continuity of this social network was disrupted by resettlement.

As with needs and expectations, unfavourable conditions of the settlers also vary with specific parameters including the type of disaster, event of displacement, involvement of host community, phase of resettlement, and voluntariness to resettle. The analysis further showed that the findings validate the unfavourable conditions of the resettlements and confirm that they have much in common with what are faced in developing countries, including some of the serious gaps and barriers identified in the study.

9.2.4 Objective 4

The fourth objective of this study was to establish the gaps in the top-down and bottom-up perceptions. This objective was designed to compare the process-related gaps and outcome-related issues. The objective has been achieved through the analysis and synthesis of the collected data. The findings relating to this objective, discussed in Chapters 7 and 8 and presented in the form of a model in Figure 75, are as set out below.

The underlying mechanism for dissatisfactory resettlement has been identified and presented as a model that explains the bases for the pattern of desire to retain the house given in the resettlement. According to the model, the desire to possess a house declines during the normalisation period owing to gaps in the top-down and the bottom-up perceptions. Accordingly, the gaps in the said perceptions were organised in a table format, based on the conceptual model, with indicative actions identified based on the literature survey. Gaps in the top-down procedures are presented according to the stages of the

resettlement, and those in the bottom-up perceptions according to the parameters that emerged from the cross-case analysis. Gaps in the top-down process are issues related to the resettlement process, and those in the bottom-up perception are the outcome-related. As outcome-related problems result from gaps in the process, the tabulated formulation shows the interconnection between perceptions.

A series of expert interviews were conducted to validate the observed gaps in the top-down and bottom-up approaches and identified actions in the Sri Lankan context. The analysis of interviews was used to establish the gaps to make them the basis for the final framework.

9.2.5 Objective 5

The fifth objective of the study was to develop a framework to augment the post-disaster resettlement process through adaptable built-environment. This objective was intended to enable the arrival at plausible means to overcome the gaps in the resettlement process and the outcomes. The objective was achieved by organising the key findings of the empirical study in a structured format that is usable with ease by policymakers and practitioners. The findings related to this objective, discussed in Chapter 8, are summarised below.

A framework has been developed based on the established and validated gaps in the top-down and the bottom-up levels, comprising the stages of resettlement, issues and indicative actions. The content of the framework is based on well-researched outcomes that have been validated by reference to experts in the field. The format of the framework follows the improved version of the conceptual model referred to in Objective 4 above, developed based on the literature survey. The final version of the framework is referenced to three documents at each of its components. Document 1 explains the gaps and indicative actions in the top-down resettlement process, Document 2 describes the needs and expectations of the communities and indicative actions, and Document 3 explains the challenges and obstacles in the resettlement process and indicative actions to mitigate them.

The final framework was developed, incorporating the feedback from the experts. The accomplishment of this objective fulfils the aim of the study undertaken.

9.3 Contribution of the research to theory and practice

This study contributes to the existing body of knowledge by producing a framework to enhance the post-disaster resettlement process. The contribution to knowledge of the present study is stated in this section under two categories namely: the theory and the practice.

9.3.1 Contribution to theory

Large-scale resettlements in developing countries are criticised for their inability to meet the long-term aspirations of the settlers. The most highlighted reason for this criticism is that the built environment is inadaptable to the communities. Further, much of the extant literature emphasises that the host community plays a major role in the long-term satisfaction of the built environment. In that context, this study provides a new perspective on the disaster-induced internal displacements and resettlements studies by exploring the potential of the built environment to enable healthy social mixing among communities.

Academic research in disaster-induced internal displacement and resettlement is more recent than the studies relating to other types of displacement such as development-induced displacement and resettlement, economic migration and refugee crisis. This research thus contributes to a less explored area of research by analysing issues of a spectrum of disaster-induced displacement and resettlement.

This study presents the underlying mechanism for dissatisfactory resettlement based on the pattern of desire to retain the house given in the resettlement. This model was developed by working back from the observed regularities to a possible explanation. Thus, it is a unique contribution to the theory. Further, this study introduces in its final framework a potential middle ground between the top-down or bottom-up approaches, that offers practical possibilities to implement resettlement that would averting the pitfalls of adhering to solely to either approach. This study is also among the first to describe the phases of resettlement and issues associated with each. Further, the proposed framework identifies how issues at the top level, in the context the general lack of scientific rigour in policies and procedures issued by government and non-governmental institutions, affect beneficiaries at grassroots level. The outcome of this research will help to bridges that gap by contributing, in the form of lessons learned, to the knowledge pool of policymakers.

This study concerned post-disaster resettlement impacts from the perspective of the built environment. Built environment research and disaster management research, thus far, appear to have been approached distinct research fields; and this study could serve as a bridge between the two research domains and enhance the shared knowledge pool.

9.3.2 Contribution to practice

This study establishes the built-environment related issues that lead to dissatisfaction in resettlements. It also identified the gaps and barriers in the top-down procedures as well as obstacles faced by and expectations of grassroots beneficiaries. Based on the empirical findings, the study offers a framework to augment the process of resettlement. The proposed framework will benefit governments, policymakers and academics to overcome

process-related and outcome-related issues that lead to resettlement failure. It will also benefit funding bodies and non-governmental organisations to determine the best practices for fund allocation and resettlement design in future programmes.

The study identifies five parameters based on which the resettlements can be classified. Those are type of disaster, involvement of host community, phase of resettlement, involvement if displacement, and voluntariness for the resettlement. The study concludes that based on these parameters the resettlement projects need differences in treatment. This is a significant contribution to the practice, which can be adapted to ensure the success of resettlements.

The study also addresses one of the four priorities of Sendai framework adopted by the United Nations for disaster risk reduction 2015-2030. Priority 4 of the Sendai framework is "enhancing disaster preparedness for effective response and to 'Build Back Better' in recovery, rehabilitation and reconstruction". The outcome of this study contributes to Priority 4 by proposing actions to augment post-disaster recovery and reconstruction. As the research has been conducted in a high priority area, it could provide a valuable contribution to the practice of post-disaster resettlement.

As the framework is validated by the experts, there is room to adopt it in designing, implementing, evaluating and managing disaster-induced resettlement programmes in Sri Lanka. It may also be adopted, according to context, as a guide by other developing countries facing issues of displacement similar to Sri Lanka.

9.4 Limitations of the study

Although evidence was collected via multiple sources, multiple cases were studied, and case study followed a structured protocol to ensure the validity and rigour of the study, the philosophical nature of the study imposes some limitations on the study.

Data was collected via community interviews, expert interviews and questionnaire surveys. Interview responses of the communities are mostly context specific and reflect subjective perspectives. Expert interviews were, however, not context specific, and community interviews were validated using a subsequent series of expert interviews to overcome this limitation. Although the final framework of the study has been validated based on a series of expert interviews, its applicability and practicality, however, remain untested as this is beyond the scope of the study.

Another limitation of this study is the research problem is confined to Sri Lanka, with data is collected only in Sri Lanka. Although the findings of the literature survey show that most of the resettlement-related issues faced by developing countries have much in common,

including some of the serious gaps and barriers identified in Sri Lanka's resettlement process, the findings can only be generalised subject to context specific corrections.

9.5 Further research

Some recommendations for further research are presented below.

A shortcoming of this study is that the final framework determined by the study has not been tested for applicability and practical implications as that is beyond the scope of this doctoral study. Thus, it is recommended that the final framework be applied in selected ongoing resettlement programmes to test its validity in practice.

Although the findings of the literature survey suggest that the findings of this study replicate issues in other developing countries, there is need for empirical evidence to affirm this. Thus, it will be desirable to conduct similar case-study based research in other developing countries, based on similar case selection criteria.

This study was conducted in the context of built-environment, so that the final framework offers solutions to augment the resettlement process in a built environment. It is therefore recommended that studies of a similar mature are conducted from economic, social, and cultural perspectives to appreciate the reasons for resettlement failures from different perspectives.

The final framework of this study lists the gaps and barriers in the top-down and bottom-up procedures. The indicative actions suggested for each issue is mostly identified in the literature and validated by experts in the relevant field. Thus, appropriate actions to address these issues may be verified based on empirical studies to persuade and facilitate practitioners.

9.6 Concluding note

The main conclusions of the study have been summarised in this chapter and it has been demonstrated that the aim and objectives have been fulfilled. The primary outcome of the study is a framework to identify and eliminate process and outcome related issues during resettlement planning and implementation. The study also explains the underlying mechanism of resettlement dissatisfaction. Thus, the outcome of the research contributes the theory and practice of post-disaster resettlement. Despite the identified limitations inherent to the study, the researcher has taken utmost effort to avert their consequences. Finally, the outcome of the research opens up further research areas in terms of context, focus and application.

Appendices

Appendix 1: Questionnaire: Resettled community

Obstacles and challenges of the displaced community after the relocation

This questionnaire aims at identifying the built environment related obstacles and challenges faced by the displaced community after being relocated.

1. General Information

1. Name of the housing project: ……

2. D.S. Division: ……

3. Number of family members: ……

4. How long have you been living in this house? ……

5. Housing approach: Donor ☐ Owner ☐

6. Occupation: ……

7. Age: ……

2. Pre-disaster housing and livelihood

8. Occupation before disaster: ……

9. House ownership:

Own		Rented		Government		Others	

10. Land area:

Less than 10 perches		11-20 perches		21-30 perches		More than 30 perches	

11. Number of bed rooms

1		2		3		More than 3	

12. Utilities

Electricity		Water		Gas		Telephone	

13. Distance to work place

Less than a Km		1-3 Kms		3-10 Kms		More than 10 Kms	

3. Present housing and livelihood

14. House ownership

Deed obtained		Deed pending		Government listed occupier		Other schemes	

15. Land area

Less than 10 perches		11-20 perches		21-30 perches		More than 30 perches	

16. Number of bed rooms

1		2		3		More than 3	

17. Utilities

Electricity		Water		Gas		Telephone	

18. Distance to work place

Less than a Km		1-3 Kms		3-10 Kms		More than 10 Kms	

19. Distance to previous location

Less than a Km		1-3 Kms		3-10 Kms		More than 10 Kms	

Below are a number of factors that cause obstacles after relocations. Please assess to what extend the following cause obstacles or challenge in your day to day life. 1 being 'Not at all an issue' and 5 being 'Severe problem'

4. Housing

20. Ability of the house to provide protection from all the anticipated extremes of the weather

1		2		3		4		5	

21. Comfort of the house (Lighting, temperature, ventilation, noise, user control)

1		2		3		4		5	

22. Completeness, capacity, and positioning of the house

1		2		3		4		5	

23. Operational cost (energy, water, waste)

1		2		3		4		5	

24. Space availability (Size, relationship, adaptability)

1		2		3		4		5	

25. Availability of communal space around the house

1		2		3		4		5	

26. Ability to maintain the house (Cleaning and routine maintenance)

1		2		3		4		5	

27. Ability to expand, upgrade, and ability to accommodate changes

1		2		3		4		5	

5. Infrastructure

28. Access to drinking water

1		2		3		4		5	

29. Availability of electricity

1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐

30. Adequate sanitation and waste disposal

1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐

31. Availability of schools

1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐

32. Proximity to the main road

1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐

33. Availability of hospitals

1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐

6. Location

34. Familiarity and hospitality of the host

1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐

35. Environmental changes (Climate difference compared to the previous place)

1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐

36. Land use patterns (Exchange to which land you get this land)

1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐

37. Land ownership/title related issues

1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐

38. Distance to previous location/ work place

1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐

7. Others

39. Economy e.g. decline in income, decline in employment opportunity, and price increases

1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐

40. Social e.g. lack of social rights, drop in social status, and local community relationships

1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐

41. Cultural e.g. mismatch of culture, and communication difficulties

1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐

42. Political e.g. legal status, and decline in political representation

1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐

Thank you

Appendix 2: Questionnaire: Host community

Obstacles and challenges of the host community after the relocation

This questionnaire aims at identifying the built environment related obstacles and challenges faced by the host community after the relocation.

1. General Information

1. D.S. Division: ……

2. Number of family members: ……

3. How long have you been living in this area? ……

4. Occupation: ……

5. Age: ……

2. Pre-relocation housing and livelihood

6. Occupation before relocation: ……

7. House ownership:

Own ☐ Rented ☐ Government ☐ Others ☐

8. Utilities

Electricity ☐ Water ☐ Gas ☐ Telephone ☐

9. Distance to work place

Less than a Km ☐ 1-3 Kms ☐ 3-10 Kms ☐ More than 10 Kms ☐

Below are a number of factors that cause obstacles after relocations. Please assess to what extend the following cause obstacles or challenge your day to day life. 1 being 'Not at all an issue' and 5 being 'Severe problem'

3. Present housing and livelihood

10. Availability of communal space

1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐

11. Access to drinking water

1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐

12. Availability of electricity

1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐

13. Adequate sanitation and waste disposal

1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐

14. Availability of schools

1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐

15. Proximity to the main road

1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐

16. Availability of hospitals

1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐

17. Changes in land use patterns

1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐

18. Relationship with the new community

1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐

19. Reduction in common resources

1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐

20. Economy e.g. decline in income, decline in employment opportunity, and price increases

1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐

21. Social e.g. lack of social rights, drop in social status, and local community relationships

1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐

22. Cultural e.g. mismatch of culture, and communication difficulties

1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐

23. Political e.g. legal status, and decline in political representation

1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐

Thank you

Appendix 3: Semi-structured interview guideline

Relocation agents (Local authority officials /NGO officials/ Academic experts)

1. International guidelines related to involuntary relocation that are considered

2. Views about community participatory approach (bottom up)

3. Problems/ barriers in planning and implementations during and after the relocation

4. Barriers in incorporating community participation

5. Planning of common spaces

6. Infrastructure planning/ existing infrastructure can become overwhelmed unless it

is supported adequately and effectively

7. Construction regulations/ building codes

8. Scale of applicability and implementation of the following acts

i. No. 09 of 2007, Resettlement Authority Act

- Section 14(a) of this Act emphasises that, forging a better understanding between the internal displaced persons and host communities
- Section 14(k) states that, the authority may receive representations of the displaced on their needs to find solutions
- Implementing relocation programmes including housing schemes to facilitate the resettlement and relocation, and assisting in providing infrastructure facilities, education, and health facilities

ii. No. 29 of 1987, Rehabilitation of Persons, Properties and Industries Authority Act

- Ways of getting and providing compensations for the damages occurred by disasters

iii. No. 13 of 2005, The Sri Lankan Disaster Management Act

- Establish the National Council for Disaster Management, the Disaster Management Centre, and Technical Advisory Committees. These entities are responsible for preparation of disaster management plans, award of compensation, and all the affairs related to disasters

iv. No. 16 of 2005, The Tsunami Act (Special)

v. No. 24 of 2002, Welfare Benefits Act

- Ways of getting and providing compensations for the damages occurred by disasters

vi. No. 09 of 1950, Land Acquisition Act and its amendments

- Gives the power to the resettlement authority to acquire and hold, lease, hire, mortgage, and sell any movable and immovable properties for the purpose of resettlement

vii. No. 56 of 1988, National Environment Act

viii. National Involuntary Resettlement Policy (NIRP)

- Participatory measures should be designed and implemented to assists affected persons to economically and socially integrate with host communities
- Vulnerable groups should be identified and given assistance to improve their living standards

9. Resettlement plan or policy framework? Resettlement planning is essential if it affects more than 200 people and involves physical relocation.

10. How eligibility will be decided by the authority?

11. How resources have been shared?

- Reliable and equitable way of sharing resources to reduce the pressure

- Obtaining access to alternative resources

- Obtain public private employment to provide alternative employment

- Providing access to resources outside the area

12. Does the resettlement plan address any potential dispute resolution that could arise among the displaced and the other communities?

13. Do people have a voice in decision making?

14. How do they choose effective deign

15. How to mange balance between Safety, Lifespan, Size, Comfort, Privacy, Liability of implementing organization, Donor expectations and Cost, Timeliness, Number to be built, Materials availability, Maintenance and upgrade, Equity with host population, Capacity to implement, Cultural appropriateness, Construction skills

16. Do you consider the financial capacity of the household to upgrade and maintain the houses?

17. Although the choice of land is limited the location is more important than the design. How do you see this?

18. Will there be social impacts of providing shelters free of charge to a selected population but ignoring others?

19. How do the shelters compare to how people were living before?

20. Any restrictions in the land ownership?

21. Did the minimum requirements of building codes met?

22. Is it building back better or restoring the same as before?

23. Purchasing large amount of construction material and its impacts on the local economy?

24. Buffer zone policy and its effects

Displaced community

1. Obstacles and challenges factors and additional Factors

2. Improvements after relocation

3. Requirements during after the relocation

4. Likes and hates about the new built environment

5. Hospitality of the host

6. Extent of their participation towards resettlement planning and implementation

7. Opinion about current approach and expected improvements

8. If they wanted to stay/go back what attracts them towards the location

Host community

1. Obstacles and challenges factors and additional Factors

2. Improvements after relocation

3. Reductions in community resources

4. Extent of their participation towards resettlement planning and implementation

5. Problems after the relocation

6. Infrastructure sharing issues

Appendix 4: Sample interview transcript

What's, kind of interesting is this. So I'll probably windup speaking mostly about the Tsunami stuff in Batticaloa. Because it is relevant to you as a site. May be like I'll just tell the story as I experienced it let's say from the point of view of the displacement after the Tsunami. So when I first arrived here. I arrived here like three or four days after Tsunami, may be three days I think… met some friends for couple of days and we came here to deliver something to friends and I got involved in some sort of health response of the time. And there were 120 different camps about 120,000 people in there. But I think the total displaced population was something more like 250,000. So at least half of them were not in camps, but were with friends and relatives. And the camps were largely schools, and other sort of buildings, camps in sort of church grounds and in Kovils and so on. And at some point they became like pressure to get them out of this.

P: How long they were there?

A: They were their I would say like, it is hard to… you know two months, three months… I believe some of the schools were vacated sooner. Because, it was also the time that there were exams coming up. I think GCE A/L or O/L. I can't remember which one. It could have been O/L.

P: O/L we have it in December.

A: Unless there were something. Luckily I have my archive on here. Because there was a competitive public exam, that was so much even issue that an intervention on this issue of… Actually I can tell you… Yes. A/L exams were coming up. This is a letter I wrote to the education ministry, because, basically displaced kids were going to sit the exams. This is in February. And the exam was going to be in April 2005. And there was a proposal that they are going to do one in April and another one in June for the displaced kids. Because they lost all their notes, their lives were disrupted. So we were arguing that they should put everyone back. Otherwise there will be all sorts of repercussions that may disadvantage to these students. But with all these there were kind of a pressure to get kids out of this. Actually, people were really frightened. Because in those months after the Tsunami people didn't really understand that how it really happened. One of the things we did was, we tried to explain what the Tsunami was produced by and how also you have time between the warning of the earthquake, you have 3 to 4 hours between that and the actual propagation of the wave reach in Sri Lanka. And it was interesting. Because where we did that kind of training people have got less anxious. People who didn't… really… you know there'd be so many rumours. People are in so much loss, so much death. They really were afraid and emotionally found really difficult to be in places like Navalladi, Dutch bar, and Thiruchchendur and stuff like that. So what happened is people didn't want to leave these shelters like these schools and all. But there was a pressure get them out. And actually, in one instance central college, they were going to through them off. They were going to come with the police and move them. People were so upset that they threatened like mass suicide. The way in which it was done, there is no engagement. The people are very, the whole response to this was not well organised. They would have these committees some times, camp committees that it would be dealt with. The camp committee did not necessarily represent everybody. Camp committees often did not have women in them. And camps may not always just have people from one community. So they need not know each other. So anyway, so actually one of the things that, when we heard this is going to happen we contacted the UNHCR office here and there was a young and very enthusiastic guy who worked there. Liked to be a hero. He did a good job. He went and he used UNHCR's name to calm things down, buy time and they won't kicked out. But it was the tension. And by this time the buffer zone had been put in place. So they couldn't go back home and to be honest I don't think many people at that point they were not ready to go. So then they were moved. They were move either to existing camps or they were moved to new

locations. And I remember this was now I would say probably more than 6 months in when people start move in Thiraimadu. Thiraimadu and there is another place nearby which is Palameenmadu, no I can't remember the name of the place. But the people were been moved there. And when you say involuntary, it really was. Basically trucks came and they were kind of force into it. In few cases they were actually like people and civilians were police or whatever basically like physically forced people in and they were taken actually in the evening and night and left there. No infrastructure, no nothing. I remember raising… the guy not the UNHCR guy, the guy cam after was totally ineffective and gave us a lecture how it could be raised at the general assembly of the UN. Basically we were totally burnt out didn't have… and actually reported as it not being forced… not being a forced relocation. So the thing is Thiraimadu is been essentially, totally the only land that was available to house all these people. They totally bulldozed, every tree in the place was destroyed. It was like a desert. Their was no infrastructure. Buses didn't go their. No water, no sanitation facilities, it's a bare land. And I remember like different, like there was a group from nearby, kind of a community organisation went there to try and find out what's going on. Just to know what's happening. So they can tell the communities that they work with and about where they are coming. And there was a real resistance to communication from the government officials at the time. And knowing people also when they were allocating houses what I heard from friends of people who mutual friends of the some of the government officials, that their approach was to do a lottery and not to tell anybody anything. Because they thought that was fair. Then no one is getting favoured. One thing was that they… I can understand that may they thought that people may come and lobby them or whatever. Or may be just too complicated. It met that people had no preparation. I think in one instance they had been list what called looks and see visit where they have brought to this desert place and taken back. So that's the kind of context in which these resettlements took place. And the positive thing is that when people came… many of the organisations, NGOs and so have been working with them also moved with them. So at least they had continuity in terms of people who are supposed to be looking after. But, those NGOs are not in charge of the things like electricity, water supply, like lighting, there was no lighting, no street light, its just dark. There was an open unprotected railway crossing of the railway line that run through the settlement. Somebody died actually. An old man died on that thing. I mean… it's a crazy place to… and people are so upset. Plus there are also complications which they were bringing, multiple religions together. So, I thing that they were at least 4 different villages or like areas that were been brought together and they were being house sort of… well, within their… they were been house together like kind of blocks but within that arbitrarily. So there were no things like… let's put families together, let's put people with disabilities closer to the road.

P: These are about temporary right?

A: No. This is the… They were temporary and then became permanent. So, first they started with the sheds. But this is by the way allocating like I think half an acre or quarter acre… Not acre… I don't know

P: Perches

A: I don't know how many. I am not very good with these. But it was a certain amount of land which is then going to be your land

P: I think 15 perches

A: Yeah, 15 perches something like that, okay. And then you would have… and your permeant house would also have built on that same site. But the question of… there were common wells right… if you were even get a well at that point… now if you are elderly person how far you are from the well, how far you are from the relatives none of this was worked out. So it was pretty… now let's say there wasn't the participatory process there at

all. In terms of how or what or how you configure this kind of community. And I think it was very difficult. People were very unhappy. And as they shifted from the sort of what do you call semi permanent to permanent there were also issues that arose because different people were lived in different houses. So the designs and the quality and the amount of money they were spending was variable.

P: But the money was given by the government?

A: No. It was… the land was given; I think… I don't know. You better check with somebody else. But my understanding is, there was a minimum standard that was… amount of money that was agreed. Which was… may be like, I think like 250,000 or like 175,000 something like that. And some organisations that had more money would top it up like 350,000, 330,000 and do more. But the designs sometimes were different. Like, one organisation has built the house without a kitchen or something like that. Or like one bed, or you know things would leak. And so people had this real sense of… like inequity. Like, they are getting this but we are getting that and I don't think that they were consulted on design. And the kitchen example I think was… one way… I mean clearly they hadn't thought about women and what they wanted from a house. So it was, in some ways this was like first year, second year… after this, it is still pretty not a great space. And it is also complicated by the fact that months after the… in the first year the conflict started to re-escalating. There were some killings. You know, the ex political group members who have been bumped off probably by the LTTE. So the bodies… early TELO or EPRLF people and so… it became a conflict after 2006 the conflict started escalating and it becomes much scarier place also. In that context, I don't know what the dynamics within those communities were. And this is why I think that… it might be interesting to look at this Catherin Thuhir's book. I am not sure about the last name. but I can find it. Because she actually worked in what, I think called Swiss TRO village. Even the roads and areas were named after the donors. And there was a lot of turf/conflict about you know so and so is building a play ground here… and there were 14 different groups were giving psychosocial support. And I had to go and mediate one day. We had 60 staff from these different organisations which is grate. It's rare that you get 60 staff. But it's like 4000 families… it's large number. And they were starting to compete that some are giving sweets and… it is terrible. So we discussed, how we could work together and actually facilitate groups together… we did little bit of peace building. And you know just like sewage and waste disposals. So they have to put all that stuff in. and there was concern that this was potentially flood plane as well. Actually I never… I may be wrong. I may be missed it. The fears were realised. But the interesting thing is I think 3 or 4 years later….. Just a minute.

You know that I came to Mannar to this other place where Zua is doing the resettlement. It is a very interesting resettlement thing… Kind of also… kind of… I am not sure, Can't remember the name I went. But you know Zaira. So Zaira was the psychosocial… Like 2003/4. And it is kind of whole thing. This equips the national housing development bureau or board. And they were doing sort of resettlement but the problem is that the people who were been resettled were actually gypsies. They were the people who were like no… It could have been Madukara… Then getting them to commit to a brick house was very difficult. And weirdly, it is really interesting because… So Zaira was the psychosocial person and there were all these people doing… there were so many conflicts and issues around like why they are not working on this. They were supposed to give their labour and all the stuff. She wound up actually becoming the manager of the whole thing. Because she had the information about what people wanted and why they wanted it. The meaning of the things… So I guess… I mean I think probably like lots of ways in which the process was really not… did not follow the sort of so called best practices.

P: What are the practical limitations to follow the best practices

A: In some way it is okay to go back a step like several months back. Like within… one of the things that happened in Batticaloa is that they set up very quickly this task forces under the GA. GA had this task forces and the task forces were one government agency and a non government agency. And so there were on health, education, bla bla bla… There was also on shelter. Right… to the shelter one was GTZ and was… I am not sure, may be the AGA… I am not sure who are the government representatives. And very quickly they were doing this sorts of decisions about where people would be and so on. And one of the things that came in concern within a few weeks… literally within a few weeks the question of whether they were just making decisions for people without engaging them. So actually one of the…the other thing some people did was to raise the question of participation of the people in the tsunami shelter stuff. So here there was a memorandum that was issued. In general… on the needs for participatory consultation sensitive to the context in people live bal bla. And everyone is trying to do the stuffs very urgently and basically… I'll send this to you. So it talks about all the policies and all are there at this time.

"We have been extremely concerned inadequate consultation of communities… Let alone development practitioners in… Decisions of last year's projects affecting the lives 1000s of families have been …. by locally based officials and international such as united nations and GTZ in collaboration with district representatives of the government. This is most alarming and … decisions made about temporary resettlements, displaced persons. The sense of urgency was created by the officials irrespective to whether this urgency is felt by the people who have been affected. And the decisions about location and types of shelters have been made without any consultation. It has been terrible to witness the decisions being implemented with displaced people being loaded into trucks to new locations with neither adequate prior information. No any information detaining where they might wish to be sheltered"

This was issued right… created like DOM… because we named people. We name this guys UNHCR and GTZ. They were the co-chairs I think for the shelter thing. And they were the really ones who pushing it. But… so they were very angry. But from the next week on participation became a key word, whether they did it completely effectively or not, but it got little bit better. But the same time I think you have to recognise that… so in this particular context there were two things going on. One is, it was a situation of the scale of which was never been dealt with. And it was different from the conflict. Conflict in a way the conflict always the conflict parties would mediate what happened. Here the government and the LTTE everybody was in disarray. And the numbers of organisations and resources coming which is overwhelming. Just like coping and the scale all at the same time. So it is a lot of stuff. The people were doing. So the whole sense of urgency and the sense of like… struggling to keep tracks. And also… it is sad to say in this context there also competition for power, for influence, to be the leader in this, to implement your approach, to capture this, this is our village, we are going to do this, or we are going to make a model, the common standard one is compatible to our model because we already got the resources for that, stuff like that came up. And then on top of that you also had this thing of… its been also the conflict. Like the role of the state, specially in 2005/2006. You know in 2004 we had the… you know… it hadn't been that long since the split between Karuna and Northern LTTE. It is pretty militarised context. So even things like use of force to move people… not a big deal… like it was… the potential for that was already there. So I think those are some of the factors… contextual factor that complicated this process. At the same time in a weird way this massive disaster has created a huge space. Before that people would not have been very vocal about taking leadership roles and challenging kind of things. Because specially in relation to LTTE. The LTTE though they were not here physically or they were… during the ceasefire they were also. But you know… they were running things from the other side of the lagoon. So, you know… people I think also very aware

that you don't… or it is risky to be a leader. It was really interesting that somebody who just immediately after came back from some Australian kind of development person… he into the community driven stuff and went off somewhere like in Vahara or somewhere came back… like I can't find the community… and I said what do you mean… She said no, I cant anyone who's in a leadership position, no one is coming forward to take that role. And I think that is also because that role put you at risk. You could be seen as… you know endorsed by the LTTE therefore you'd be at threat from the government. Or you might be seen from the LTTE as someone who is trying to assert themselves or to you know you might be taken for some other purpose. You know or be used in some… so staying out of it… so this questions have traced of safety you know that context I think in the tsunami context it was an unclear situation. On the one hand it created a space whereby… So I think like… I don't know this is a… but at the same time there was also this space. Where suddenly you weren't so afraid. Lot of people came out and did things. Lot of people got mobilised. I mean the stuff that we got… no one would have written a letter like this right… it came out because suddenly there was a sense of urgency, sense that these routes in the… people didn't go out in the evenings in Batticaloa. But after the tsunami there would by people in the midnight on the road. because you know random volunteers are here from all of the world. There were people here who were even know that there was a war. It was really something. Somebody once came to me actually with TRO, which was very closely associated with LTTE? And they were telling me about stuff and they didn't realise about the conflict… they didn't realise that they were there with a very highly affiliated group. And I also can't say anything. Because this person is right there. I thought how bizarre. And actually once people… you know so I think the constrains I would say this contextual ones. But then there is also kind of capacity in knowledge thing. Right so on the one hand the reasons why… why would this be better, how could this be better for people, how could this be better for communities in the longer term, for individual people how could it be better for you as an official. If people are happier, if these are worked out… was not I think very clear to people. Because their idea of equity was keep everyone in the dark. Rather than complicate your life with this. And the second is the skills to do it. How do you… if you got 4000 families to settle and you want to give them all some kind of say how do we do that? Like the tools to do that. If you are just doing on a paper and a pencil it is really impossible/difficult to analyse information to.. so I think that was also a factor… just not being able to process the kind of things. So are there at least even basic skills about how you even ask questions. So this is slightly different context but when people were in camps… now Sphere guidelines tell that you should consult people where the toilets should be. Toilets of the women and children specially. And we knew that there were problems with toilets, bathing areas. Women felt that they were exposed like people were watching them. And it is true it was happening. So okay you can cover the bathing areas and things like that. But at nights… there is big… where the university is now here there was a paddy marketing board. Massive camp. At nights to go to the toilets its dark. Anyway, there were this problems. We went one day to the… we did this psychosocial and protection task force. And we went along to the water and sanitation meeting and we made a presentation about how we should consult. Because these are the things we are hearing. And there were totally like 30-40 people sitting there. All mostly men. Nobody spoke. When we are speaking… oh my god. They are like really hate us. Really… You know really something wrong here. Something has gone terribly wrong. We have insulted them or you know they are angry with us for coming and telling them their job or whatever. I was really worried. And then one guy said, you know but how do you do this? How do you talk to the people and find out. He basically said, look we don't know how to do this. We are engineers and you know… we don't know this community relation stuff. And they said actually their meetings are bit like the one… they don't talk much even in the meeting. So they said okay fine. That's no problem. And we sent some people with them, we made little things like where you can make little cut-outs of you know the… for the toilets and bathing facilities and then you could on the sand draw the camp and you put things and then you ask. Women and men and children boys and girls where they want to put the thing. Then of course there is a

technical perspective on you know how close or far from different water sources and stuff you put it. But it was clear that some of those… just those skills to do consultation were not there. And people hadn't realise that. So I think I would imagine that that's also been one of the challenges. and I think there is another one which is the sense of urgency. Like nobody knew really the what are this stuff anyway takes a long time. So you might as well by rushing to make decisions you not actually saving time. Because to implement it's going to take a while anyway. So you might as well like get it right and engage people and so on. So I think those were some of the factors that prevented this participation. And I think there was also certain realities of the limited number of sites. The government couldn't acquire land. This Thiraimadu became a huge place because that was the only place that they could get. There wasn't another land nearby and so on. So I think that's… I don't think when things were designed there was any kind of human cantered design thinking that went in. I was more like how do we get as many as houses in, how do we get this electricity lines in… not thinking about you know we are building a permanent community, where are the common spaces going to be, where are the… you know how you are going to organise it so that people can interact with each other or to you know stuff like that.

P: What kind of a community is that?

A: that's another thing. There would have been combinations of people who were… so lot of people were displaced also from the coastal area who were fishing. Then also there would have been who are carpenters and so on… specially from some of the areas… the burger areas. Then also you have issues of like people who have regular like white collar jobs. You know… so you ask the question about you know people not wanting to leaving places and going back. So I think people at that time didn't want to go back to their old home.

P: Most of them are not there now, in Thiraimadu

A: I don't know actually, I don't know about that but, initially they didn't want to leave, there were uncomfortable… or they would sometimes somebody would go back… like one person would go back… or they go for the day and come. You know different things that happened. Mostly because of this fear is around… and I think also the sadness, I mean you know they had lot of lost. There is one area called Kalladi veloor where we have done some work with school like an activity group for children. All of the children have died. I think almost all of them died. It's like 150 children. I mean it is pretty terrible thing… really… I think it took people long time to get over that. And that area also with the conflict… it also became much military outpost there it always been a bit of a no man's land. You know… poor infrastructure, travelling… so as they built the road and things I thing people they did go back. And some people sold their lands and some people didn't. but I think…you know… if someone is given you a house, it's an asset. It's a major asset. So I don't know like why they would leave it empty. May be they can't rent it, may be they are afraid to rent it or I don't know whether there are any conditions on that. But I think it might be interesting to look at why people have gone back as a function of their livelihood. As well as, as a function of where their social networks are. Because, I would imagine that if your kin or people you are closed to, go back, then your probably most likely to go back. Because you need it. I mean us living here, we can't… there is another office house which is down the road, it is much bigger, lovely house. But I can't move there. Because this is where our neighbours… help us with so many things. The lady who helps us, used to be the children's baby sitter, she is our neighbour. So you know our life wouldn't function without this kinds of support. So I think it might be worthwhile looking for that, the inter-relationships between households. And I think that is something that might worth critiquing. Because the resettlement process does not think of community or if it thinks of community, it thinks of community in a very odd way. Just like a geographic community. It doesn't actually thinks of what are the relationships here. It doesn't thinks about networks of kinship, networks

of friendship, the practical ways in which different households… people in different households are linked together. May be you all worked on the same boat together, may be you shear child care… you know there are different sorts of functions. And I think that kind of aspect of community life is not thought of. Even in things like sphere… And I think that… I would say that for me is also one of the reasons for why this kind of… state like this kind of we've looking at resettlement… only sees things kind of units. Doesn't see a social reality.

Now what's interesting is this cause of sense of place stuff. So I don't really know about that Thiraimadu so much incidents. But I did participate in field work around… a group in Kalkuda, who were displaced inland. So it is a whole village moved in-land few KMs. But basically they were a coastal village became not coastal village. And complicated things. They lost the access to sea. Their boats were there, they were here. Then of course there were also conflicts, that they had to have permits from Navy to get on to the water, and that is also complicated. Ways in which that they produce all sorts of forms, black market and stuff, and if they go out they can't come back. Before a certain time otherwise you could get into trouble and you know all sorts of… but one of the things that people spoke about was the lost of the environment. Actually they were associated living by the sea with the sense of wellbeing. They came form the environment, they came from the wind. They have so many different names for different types of wind. But that they felt made them healthy. And in this place they didn't have the wind. In land they were cut off from that. So in a sense they lost the source of wellbeing. And also of course identity. They still identify, we are living here but we are really from there. This is where now they had the permanent houses built and so on.

P: What's the reason for restricting the ownership?

A: None of them have been given yet? I don't know what's the rationale is there. But clearly that would impact on the sense of… I mean I guess the question is this. May be look at it in relation to the fact that… like in Thiraimadu for example, people didn't give up the right to their original land. Did they? So the state has essentially given them an additional residence. And may be the state did not want to just give it whole sale. I don't know there was ever any discussion about get the deed if you give up the land and claim to your original land. There was a story… I think it is quite credible story. About a land grab. There was somebody leaked a master plan for the Navalady area to like a tourism thing. You know crisis is a great opportunity also for people. So that was leaked and then that apparently was a master plan for the tourism development in that area. So I don't know whether it is linked to that. That thing you might have to talk to someone who is involved with shelter at that time, and land stuff at the time. Their might be some newspaper reports. Because, I know that it was leaked to the newspapers. I think 'Sunday Leader' at that time. I also have a… not Thiraimadu but this Kalkuda thing… there is actually a research study that was published that uses some of the data that I collect. Which may be useful. I don't know, it would be quite interesting, I mean are you going to be able to do any interviews with people about that? I think it would be really interesting thing to find out about. I mean… I imagine that I might be interesting to look at how to do… like timelines. I suspect that people didn't all move back. So may be members of the family moved back slowly. May be what were the circumstances under which has that happened. Because, I think there will be some general stuff that may be factors you know like getting back to schools. Access to schools was a big things when people were displaced. Because they had to go to schools that… I remember the children who would travel by bus for like half an hour, 45 minutes, or cycle for 10Kms to get to a school that they used to go to. Because that was a good school. They didn't go to the other one. Either they think that was not good, or they just you know… that was not their school. Or they didn't have the sense of really living in this new place. I think this thing of mixed… I think the tsunami especially the whole idea of… provision of housing to people like… not just housing, but other types of benefits… selectivity to people who are identified as affected produced a

certain amount of like ill will and resentment. Because, also I think even with the short term displacement… because people everything… when people were displaced who fed them first? And who supported them? Actually people from those neighbouring. And then when the aid came in it went exclusively to these people and yet the others who were supported them were not very well off themselves. They also had… and the sheer volume of aid and some kind of insensitively kind of or careless way in which it was administered really led to a sense of waste a sense of… all these stories used to come up like so and so has 2 or 3 houses… right, one for their daughter one for their son, one for them you know… and it is also true. I know somebody personally whose sister who never lived here for many many years can and lived here for months and months in a camp to get a house. She put her work in. She really lived there. Like she stayed until it was like… She came from Colombo. She came and she lived in the camp with this person I know. She is actually very badly affected and actually lost the house. Right his sister… and got a house. Some of these rumours and slanders about how things worked but also true.

P: How do they select the eligible beneficiaries?

A: You have to be certified for having lost your house by the GS. You can forge or you bribe or you just… you are there. Or made the GS change the… I don't know how she did it exactly. And the whole question… how much you are badly affected. There were different categories of affectedness which then impacted on how much money you got. Bit arbitrary right. So that kind of stuff, I mean… I think it let to a lot of ill feeling and resentment. So I think that kind of thing that you had even when you are getting a house yourself when you perceive to the people in the next settlement are getting a better house and your house is sadly doesn't seem so great. If I just… kind of share with you a few frameworks. I think they might be helpful to think about. Let me search for it.

So this is just one sort of thing about… this is model for psychosocial wellbeing that we developed… it is developed by a group called psychosocial working group. It is kind of an aid agency, university collaborative group that was with big aid agencies, five very precious universities… they came up with this thing and we took the same model and some colleagues and I who are working here and we changed it a bit to reflect the ways in which people thought about it. So thinking about wellbeing or psychosocial wellbeing, there model has three components. Human capacity, social ecology, and culture and values. But we have changed it slightly. So we have human capacity, so the idea is that the people have different types of resources that helped them to maintain their wellbeing. And we can look at those resources in different ways. So if you think about human capacity all the things that are essentially that we have in ourselves. Like skills and knowledge, emotions, physical health, memory, identity and social concept. So let's say you are a man who does fishing on the coast, you are out to fishing and you come back to your house and your family has been killed by the tsunami and your whole place is been destroyed, you will have an emotional impact of cause and your loss which may make it difficult for you to think about the future make plans, you may become depressed, you may seek management of your emotions to… or cause to alcohol… you know other sorts of unhealthy coping mechanisms. But also you have been displaced to Thiraimadu there is no sea. Now even further inland. What are you going to do? You've learnt from the time you are a boy to be a fisherman. And suddenly, the skills that gave you your livelihood and ability and also gave me an identity are gone, the functions. And your daily routine, people that you go to work with, all that is lost. In a way that then will have a serious negative impact on your sense of well being. On the other hand, you also got this overlapping thing which is, we usually call it, your situatedness in relation to other services… so we simplified and say relationships with others. But also degree in nature of this support entering and access these services. That's the stuff outside of you. Now of course there is an interaction between the two dimensions. When you have kin and friends and so on… it makes, you feel more supported, you feel less anxious, it makes less lonely or whatever. But in the same way if you then withdraw

and you are not going out, you are not talking to people, you are not maintaining relationships, you don't have the skills and then your social networks can sort of also with away and thin out and you have less supports when you are in a situation of crisis. So, the third one we added was material environment. Because that seems to be something that people were very concerned about. And we thought the material environment is being also partly physical environment and infrastructure. Like is there a road, that enables me to get to work or that allows me to get my products to… you know, infrastructure around like… you know access to safe water, but also it could be things like access to hospitals, education facilities. So education service is in social equality where education infrastructure would be here. And also status of food and livelihood security. So what's the economy like? You know are there jobs? And degree of physical safety and comfort. It is just… are you in a situation where you could die on a railway crossing that is not safe. So in a way… we frame this culture and values as essentially shaping all of this. Like if you are a middle class person who is displaced into large camp with 10,000 other people, and you always had a private toilet sharing it with a 1,000 people everyday… suddenly it is a source of difficulty. It could be. Whereas, there is someone always shared facilities never had their own private space or whatever, it may not be it so much. Or if you are woman from a society where you got a… when your daughter come to an age you need to play a role in finding her a partner/ marriage partner and you are separated from your kin who would be your advisors and so on. It is much more stressful, much more difficult. I suppose, if you are woman from a society where actually your daughter will find her own partner, right. So this is a kind of context in which… events and circumstances impact on this resources. They may destroy resources, may diminish them, they may also bring in new resources. And you could take the same thing and applied to affected or forcibly relocated, you could also do it to a host community. So, if you think about the host community, what's happened… you know what's happened to the identity, what's happened to the network, resources. Right. And this helps in someway in kind of… it's a very simple thing and the reason I liked it is this is very simple and you can do it with the people who are with very little education, very little theoretical… or you can actually do it with people who have… into each of these you can add kind of much more detailed theoretical constructs as well. This is from the training thing we ran, a colleague and I. So you know what's happened to her… impact… like you map where the changes are… now the way we think about psychosocial stuff now is…

7 key actions, this is the one. So this pyramid, which is not become very popular. To help us think about psychosocial impacts and the types of supports that are needed. So on the one hand we have at the top, they are often that people think about… so like psychiatry, even like complicated social interventions will be up there. And then more general programmes like say programmes for kids who have been displaced or like a widows group or you know things that targeting specific problems but not so specialised might be there. And the idea is that the people need an additional support. And here is where you are really trying to get people you know kids going beck to school, you know establishing may be like a loans and credit scheme then that also bring men into contact with one and other, they are meeting new friends whatever, and then here this is place where sort of there is acknowledgement that certain basic infrastructure thing around livelihoods, around shelter, around water and sanitation, how it's provided. Having those things helps buffer you, but be how you have those things, how they are provided, how you engage them can also be really crucial. So consultation and decision making in resettlement becomes an important element of the process. So this is where the stuff I was showing… in terms of activities like lot of psychosocial stuff was done as a kind of stand alone. So a counsellor or a therapist or whatever. You know an art and expression class for children or whatever. There was this understanding that you need more than that. That it isn't enough. Like people have other problems. From very practical point of view they are not very keen to come and talk to you because they are these practical problems. People started adding thing you know legal assistance, loans or stuff like that. But it is also clear that sometimes they were closer

to their relatives. So people started bundling them together. So they do loan scheme, shelter provision, water and sanitation. So that I think Madukarai, I think it is that thing, started off little bit like that. You have shelter staff, you have some livelihood staff, some for education, and you have psychosocial person. They all working as a part of one team, they accessed all the services together. But, what Madukarai became was that the psychosocial thing became the platform. Because you realise that what people are… psychosocial stuff… is what is important. What has meaning for people, what people are upset about or desiring. And that this can then the psychosocial workers, and psychosocial services can help us guide what we do. Right, for example, in a resettlement place in Vavuniya, this psychosocial workers… so there was a loan scheme, these psychosocial workers understood, what the meaning of the loans were in a different way from the people wo were doing the loans. Psychosocial people who are talking to the people about their lives. And they knew that, for example, this lady is getting a loan theoretically for some kind of livestock project. But actually its because of her daughter is coming to age and needs to have a puberty ceremony. And that's really important for her. Because you know, as a single parent, one of the important things that she needs to do for her daughter socially and culturally and to also to be a good mother. So now the psychosocial people were like you know, they had to mediate, in that case there was a bit of a dilemma, because if they say that to their colleague then she won't get the loan. Because it's not going to give a return. At the same time it is really important. So that was at that kind of mode. And then, another approach to say look… it is not integrated in the way in which you do things. So for example if you are doing resettlement how you should help people to feel ownership. The information you give them, the role you give them, the ability to make decisions, the dignity with which you call them yours. Then allows you to then do… recognise that providing legal assistance, involving them in construction, making the loan process much more sensitive to their priorities or less pressurising might actually can have psychosocial benefits. And then you have that and also you have the stand alone… because some people… the risk with some of these stuff is that its all hidden inside the way in which you are doing other things. Sometimes you also just need the support. So I think what might be quite interesting is the way of looking at… let's say if you talk about equilibrium around losses and benefits, in terms of meeting needs and those three domains, human capacity, social ecology, and material environment. You could look at, if you wanted to, you could apply the two these resettlement processes around the idea of wellbeing in this context, I suppose to… whatever you are trying to achieve would be is settlements right? Like what is success? In a way if you think it from a human point of view, it's the people are doing well, in their terms. I think a psychosocial perspective could be some kind of interesting and useful.

I will send you some articles in which that stuff is discussed. There are also some frameworks around refugees and host communities. Right… so around like I think it is Alesta aga? Who is actually in Istanbul, I met him there. I think he did a paper, I'll find it and send it to you. It's sort of… and he and someone called Alisson Strang who is a good friend of mine, they came up with a framework for refugee integration, kind of psychosocial but broader than that. So this one has become a kind of influential thing in refugee studies. And there was a special issue of refugees… also they were looking at UK but they have since used it in other contexts. Markers and M..s? social connection facilitation foundation. So this may also be an interesting tool to use. Because, I am pretty sure that they haven't been used for internal displacement, it may have been used for internal displacement. Concepts are different between internal displacement and refugees, but the dynamics may be quite similar, in terms of the communities coming, one community being resettled within another.

P: The differences are vast.

A: They could be quite vast because of the cultural differences, different countries and stuff, and the status may be different. May be they don't have citizenship and stuff like that. But here are still other ways in which you know… you can still look at whether their citizenship rights are similar or not. Because, it's formally they may be, but you may not still the displaced person have… like for example, let's say how you are treated in school when you are a displaced child, you are discriminated against, if anything goes missing you are blamed. Or may not have the same… you may be poorer, because you have lost so much. You may be remarked about you don't have shoes you are wearing slippers… there were lots of things… many displaced children resulted in they are dropping out of school and stuff like that. In the 90s and early 2000s so… even though citizenships… they formally have it, in the way in which its… what do you call? The rights are not enjoyed in the same sense. And I think that might be worth looking at. So I think that might be useful one for you to see. So I know that Allison has since doing research on how to measure these things. So producing all this sort of network drawings… you know what social integration, or social connection looks like in practice. If this may have been evolving since then. So there is the… they published this in 2008. And since then, as I said there was a special issue of refugees around it. It's been used by UK government and stuff there. So I can email that to you. So that's the sorts of things, I don't know it is at all helpful with your stuff.

P: Can you compare their previous houses and current houses. Because, some of them have lived in slums and shanties and now given formal houses. So they are not used to the formal life like paying bills and all.

A: It is very important question. But I don't know. Honestly, I cannot tell you, I don't know about it. But I know that it can be a challenge because like this Indian housing scheme. I mean one of the things is that its like… a new type of house means a new type of living. Lived experience is going to be different, where you can cook. Also there is a cost implication. But even just the idea of the… what is proper cooking, what is the way that you make food that is relay meaningful to you? Even like the stuff around like how do you manage space? Like I mean it is hard to know… who sleeps with whom? We have privacy, not privacy. I mean they may not always have been bad changes. There may be good ones. Where you didn't have privacy and now you do. Specially for adults… for children. So honestly I can't really say much about that. I do think that like… I mean I don't know anything about construction. But I do know that like, it may be possible like when you give people options. I mean I've done something different. We firstly did in Mannar, where a colleague and I… we were trying to help built a new mental health unit/ ward. And basically there's no money for this. So, he'd built wards elsewhere. And what we did was we just cut out pieces of paper to the scale of the size of the ward… of the different units. There will be nursing stations, toilets, there will be this thing and that. And we went and measure the area that was available. And we drew it on a piece of paper, and we got the people who were working there and then sign it down on a table together. And we basically played with these pieces of paper until we came up with kind of an arrangement that they were happy with. And then we took a picture of that. And we took it and gave it to an actual architect who then drew it in a way that it was a bit more could be use by a contractor. And we gave it to a contractor who built it. Now the thing is that process was actually quite… the basic blocks were already given. It was just how do you put it together. And of course the architect gave us advice on if you build… it this the roof is going to cost as twice as much. Or if you do it like this it is going to be less. So this particular type of… so stuff like that. I think there can be a component a half way house between your resource availability and basic like technical knowledge from other situations being able to guide… some ideas were what the options are. But then to give people some degree of space to… let's say configure those options. And to engage with that. So that you don't say what kind of houses that you like. You would say this is what we can afford, these kind of components, how do you like to put it together. May be this two rooms will not without wall and a bigger

room, stuff like that. I don't know. Just for the design and participation part, I don't know whether those types of approaches are viable.

It would be interesting like can I add… I have a little bit of savings or sell my jewellery can we add another room? I could be difficult but it is not something impossible either. If you think about investment in somebody for the rest of their life… I am just thinking may be its… because otherwise its… I mean obviously you have to have cut off point where you say this is now decided we can't… like we are going ahead with this. But I wonder I mean how… I don't know about examples about the places but how much it could be possible. It might be interesting to look at these smaller scale constructions where people have a lot more levy. And how long did it take? How complicated was it?

I wonder I mean, if you are thinking about the money involved to finish these things is not… like whether the money given was adequate. The thing is if you think about not just on the… there were also this so-called owner driven houses that were linked to this NERP? I think… North East Housing Project? I think… so it is a world bank project. But they were doing it at the time when the TMVP was in its early powerful days. And the TMVP took their money. They said you give it to us we will administer it and do… it will be better for you all. Because we will do all of them together and it is costless. But then there was some dissatisfactions that they have made the boundary foundations… like too shallow or stuff like that and then they were threatening that if they tell the world bank and they will suspend the project and they will lose their house totally. So stuff like that was also going on. I mean to do with the time. I mean the era. As far as I know nobody said anything.

P: How do they design the house?

A: It could be very much based on idea of what a house should be. I mean I suppose some with the sate programmes, I wonder if there are certain designs from… through the national housing development board or stuff like that. I don't know.

Let me see if I can find any work that we done on like experiences of displacement and sense of well being and those losses. Typically, I think we tend to not looked at displacement like per say like displacement is one of the many and relocation is one of the many things that happened to people. So we don't always pull out the displacement and resettlement aspect alone.

Appendix 5: Ethics approval

Form 3

THE UNIVERSITY OF HUDDERSFIELD
School of Art, Design and Architecture

POSTGRADATE STUDENT / ~~STAFF~~ RESEARCH ETHICAL REVIEW
(Limited or ~~Significant~~ Risk)

Please complete and return via email to to school research administrator (S.E.Baines@hud.ac.uk) along with the required documents (shown below).

SECTION A: TO BE COMPLETED BY THE APPLICANT

Before completing this section please refer to the School Research Ethics web pages which can be found at this link. Applicants should consult the appropriate ethical guidelines.

Please ensure that the statements in Section C are completed by the applicant (and supervisor for PGR students) prior to submission.

Project Title	Mainstreaming community collaboration within involuntary relocations to enhance post disaster recovery: From the lens of built environment
Applicant	Ms Pournima Sridarran
Supervisor (where applicable)	Dr Kaushal Keraminiyage
Award (where applicable)	-NA-
Project start date	22nd of April 2015

SECTION B: PROJECT OUTLINE (TO BE COMPLETED IN FULL BY THE APPLICANT)

Issue	**Please provide sufficient detail to allow appropriate consideration of any ethical issues. Forms with insufficient detail will need to be resubmitted.**
Aims and objectives of the study. Please state the aims and objectives of the study.	**Aim** This research aims to enhance 'post disaster recovery' within involuntary relocations by facilitating successful implementation of involuntary relocations in Sri Lanka, which predominantly in built environments. The research focuses on providing mechanisms to improve collaboration between host and displaced communities including communities' concerns, required actions and changes in policies. **Objectives** 1. Explore current procedures and policy requirements that is followed by the government/ relocation agencies 2. Compare and contrast both communities' concerns and requirements during relocation, and identify required actions in the relocation procedures 3. Evaluate challenges and obstacles that are potentially unsettling to the communities and determine ways in

	which the settlers could smoothly adapt to the new environment 4. Appraise both top down and bottom up approaches to recognise mechanisms that can be incorporated with the current system 5. Develop a framework by integrating all mechanisms to enable successful implementation of involuntary relocations
Brief overview of research methodology The methodology only needs to be explained in sufficient detail to show the approach used (e.g. survey) and explain the research methods to be used during the study.	Case study approach has been chosen as the most appropriate method to answer the research questions. Within this methods semi-structured interviews, questionnaire survey, and document reviews will be used as data collection techniques. To obtain data to achieve 1st 2nd and 4th objectives, semi-structured interviews will be conducted among academics, government/ local authorities'/ NGOs' officials, and groups of selected representatives from both displaced and host communities. In order to obtain data for the 3rd objective, questionnaires will be distributed among displaced and host communities. Document reviews will be conducted to obtain data to achieve the 1st objective
Does your study require any permissions for study? If so, please give details	No
Participants Please outline who will participate in your research. Might any of the participants be considered 'vulnerable' (e.g. children)	Potential participants for this research are academics related to disaster relocation policy making, government/ local authorities/ NGOs' officials who involved in relocation planning and implementation, and groups of selected representatives from both displaced and host communities. Disaster affected communities will be interviewed for the purpose of this research. However, painful memories or stories of losses will not be discussed during the interviews. Therefore, none of the participants can be considered as 'vulnerable'.
Access to participants Please give details about how participants will be identified and contacted.	List of involuntary relocation sites will be collected through local authority personnel. Benefactor, relevant authority officials, and beneficiaries will be identified from the project specification. They will be initially contacted through e-mails. Using snowball sampling technique, study contacts will be expanded by recruiting future contacts from their acquaintances. Some considerations for inclusivity include: 1. Sample group of (Housing schemes/ Owner built houses) displaced people 2. Sample group of people from host community 3. Responsible officials form relevant authorities 4. Academic experts 5. Responsible officials form benefactors

How will your data be recorded and stored?	With the permission of participants, interview data will be audio recorded possibly with supporting notes. Collected data will be transcribed into written form later. Hard copies such as questionnaires, interview notes, prints of photographs, or audio tapes will be kept securely locked away. Digital files will be anonymised and saved with password protection.
Informed consent. Please outline how you will obtain informed consent.	Before contacting the participants, relevant authorities/ divisional secretariats and community leaders will be contacted and kept informed about the purpose of the study, duration, and procedures. During interviews, as a researcher I'll explain the study, share appropriate information, and address any questions or concerns of the participants. Signature will be obtained from all the participants on the informed consent form prescribed by the University of Huddersfield. Participants will be checked back throughout the research to ensure continued consent. And they will be given a chance to withdraw their participation at any time within the process of the research.
Confidentiality Please outline the level of confidentiality you will offer respondents and how this will be respected. You should also outline about who will have access to the data and how it will be stored. (This information should be included on Information your information sheet.)	Hard copies such as questionnaires, interview notes, prints of photographs, or audio tapes will be kept securely locked away. Digital files will be anonymised and password protected. Data will only be access by me, the researcher and my research supervisor. Particular care will be taken when accessing the data in the shared computers of the university.
Anonymity If you offer your participants anonymity, please indicate how this will be achieved.	All the data will be anonymised before storage. Name of the participants will not be revealed in any outcomes of the research. Also, other information that can help to identify people, such as job title, age, gender, length of service, and strongly expressed opinions will not be revealed in any outcome of the research. However, geographical locations of the participants will be included in the writings as it is one of the key data for this research.
Harm Please outline your assessment of the extent to which your research might induce psychological stress, anxiety, cause harm or negative consequences for the participants (beyond the risks encountered in normal life). If more than minimal risk, you should outline what support there will be for participants. If you believe that that there is minimal likely harm, please articulate why you believe this to be so.	A group of people from disaster-induced displaced community will participate in interviews. However, questions will be designed around requirements and considerations for recovery and no questions will be asked that may recall the memories of the disaster or conflict. Therefore, the likelihood of causing psychological harm to the participants is minimal.
Does the project include any security sensitive information? Please explain how	-NA-

processing of all security sensitive information will be in full compliance with the "Oversight of security - sensitive research material in UK universities: guidance (October 2012)" (Universities UK, recommended by the Association of Chief Police Officers)	

Retrospective applications. If your application for Ethics approval is retrospective, please explain why this has arisen.
-NA-

SECTION C – SUMMARY OF ETHICAL ISSUES (TO BE COMPLETED BY THE APPLICANT)

Please give a summary of the ethical issues and any action that will be taken to address the issue(s).

Risk	Potential impact	Likelihood (Low/Medium/High)	Mitigation
Face to face interviews and may involve sensitive subjects; e.g. discrimination in the new location, disaster memories	- Participant might be harmed/ stressed psychologically - Interviewees could be upset and become violent towards the researcher	Low	- Interviews will be conducted in safer environment with necessary support - Offer to cease interview in case of emergency
Interviews with group of participants	Disagreements or conflicts among interviewees	Low	- Offer to cease interview in case of emergency
Data collection in unfamiliar environment with unknown participants	Researcher may be harmed physically or psychologically	Low	- Obtain necessary permissions from responsible authorities - Visit the places prior to the data collection - Establish contacts prior to the data collection - Researcher is capable of communicating in all official languages of Sri Lanka

SECTION D – ADDITIONAL DOCUMENTS CHECKLIST (TO BE COMPLETED BY THE APPLICANT)
Please supply copies of all relevant supporting documentation electronically. If this is not available electronically, please provide explanation and supply hard copy.

I have included the following documents

Information sheet	Yes	☑	Not applicable	☐
Consent form	Yes	☑	Not applicable	☐

Appendix 6: Framework before validation

Factors influence the desire of the beneficiaries to remain in the resettlement	**Sub factors**	**Actions**
1. Alternatives become available		Impose strict restrictions to enter prohibited, restricted, and warning zones
		Utilise restricted, and warning zones for regeneration purposes
		Consider the previous financial status of the beneficiaries before offering the houses
2. Gaps and barriers of the top-down resettlement process	Policy level	
	Practical difficulties in implementing policies and procedures	Create new recovery authority instead of using existing government organisations
	Contradictions in policy objectives	Define policies for disaster-induced resettlements and institutional mechanisms before disaster strikes
	No well-formulated housing policy for DIDR	Define tailor made policies for disaster-induced resettlements
	Existence of too many guidelines without integration	Integrate all guidelines by eliminating repetitions and contradictions
	Retention of resettlement powers by several institutional bodies	Identify all the stakeholders early in the project to understand their potential influence
		Integrate participation of all the institutional bodies with local government
	Practical difficulties in implementing policies and procedures	Provide support and accountability from the central government
	Implementation	
	Not considering resettlements as long-term developments	Provide temporary shelter solutions based on a realistic assumptions about time
		Plan in advance for activities that require long time e.g. land acquisition, community consultation
	Approaching the resettlement process linearly	Integrate different recovery phases such as mitigation and preparation strategies in the process
	Inefficient handling of funds	Allow government intervention in market flexibility and donor management

Factors influence the desire of the beneficiaries to remain in the resettlement	Sub factors	Actions
		Distribute available resources and funding sources throughout the realistic construction period
	Lack of preparedness for resettlement	Establish institutional mechanism, planning and coordination methods before operations begins
	Difficulties in the coordination and execution among institutions	Identify potential influences, roles and responsibilities of stakeholders including funding bodies, local government, NGOs, and affected population
		Develop agreement of work plan for each stakeholder based on the overall resettlement plan
	Sense of urgency	Provide temporary shelter solutions based on a realistic assumptions about time
	Competition for power and influence, and corruption	Monitor the involvement of foreign NGOs with inexperienced staff in unfamiliar conditions that are vulnerable to corruption
		Decentralise procedures with community participation
	Adhering land selection criteria	
	Limited number of available lands	Develop a database of available lands for resettlement including geographic and socio-economic features
	Non-consideration of suitability of location	
		People who lives in medium-risk prone areas can be given an insurance policy rather than resettlement programmes
	Non-consideration of socio-economic conditions	Identify the beneficiaries and potential host communities early in the project and understand their influence
	Adhering beneficiary selection criteria	
	Contradictions in the criteria	Collect data from secondary sources rather than depending on a single weighting system
		Provide sufficient resources and administrative capacity to the implementation agencies
	Ambiguities in the criteria	Define a tangible method for qualifying process

Factors influence the desire of the beneficiaries to remain in the resettlement	Sub factors	Actions
	Limited number of house offers by the funding organisations	Define how the housing shortcomings will be addressed and provide appropriate funding
	Lack of available data	Consult community leaders and local authorities to identify deserving beneficiaries
	Reluctance of beneficiaries	Adopt suitable and trusted communication mechanisms
		Involve beneficiaries in the resettlement process
	House design	
	Repeated use of the same house design	Define mechanisms to transfer lessons learnt
		Consider complexity and impact of the disaster and sociocultural context of the beneficiaries for house designs
	Unavailability of special building codes for resilient resettlement	Propose special building codes including alternative technologies for resilient resettlements
	No provisions for future improvements	Build a core house with minimum standards and allow space for future improvements
	Inadequate consideration of social, economic, and cultural perspectives in design	Incorporate feedback mechanism to improve reconstruction outcomes
	House construction	
	Irregular monitoring of the construction process	Establish monitoring systems to understand the construction process undertaken by aid agencies
	Failure to monitor post-construction and post occupancy performance of the houses	Incorporate feedback mechanism to improve reconstruction outcomes
		Evaluate the outcome and update the policies and procedures
	Ignoring potential for further modifications or extensions	Build a core house with minimum standards and allow space for future improvements
	Use of poor quality materials and workmanship	Involve communities and monitor closely to avoid corruption
	Limited involvement of beneficiaries	Adopt suitable and trusted communication mechanisms
	Procedural and bureaucratic delays	Identify potential influences, roles and responsibilities of stakeholders including funding bodies, local government, NGOs, and affected population

Factors influence the desire of the beneficiaries to remain in the resettlement	Sub factors	Actions
3. Lessening of traumatic impression and newness bias		Carryout awareness programmes and continuous disaster prevention and mitigation activities
		Build a culture of safety and resilience
		Encourage private sector investments in risk reduction
4. Unfavourable conditions for the beneficiaries (Bottom-up perception)	Houses need expansion	Build a core house with minimum standards and allow space for future improvements
	Inadequate space for expansion	Identify minimum standard as required by the regulations
	Defects in the houses/ poor quality of material/ poor quality of workmanship	Ensure access to quality construction materials
		Involve communities in the process to avoid corruption
	Location prone to disasters	Develop a database of available lands for resettlement including geographic and socio-economic features
	Unimproved physical and social infrastructure	Develop minimum standards for infrastructure provisions in proportion to the population increase
		Incorporate infrastructure plan to the housing design
	Changes in land use pattern	Consider landscapes similar to the beneficiaries' previous occupation
	Restrictions in legal ownership	Acknowledge the housing rights and provide special privileges
	Undefined boundaries	Consider boundary demarcation
	Disruptions to livelihood/increased living expenses	Actions to restore living standards
		Avoid resettlements in distant locations
		Identify the need for livelihood assistance
	Furniture does not fit in the new house	Satisfy minimum housing standards
	Housing construction takes long time	Provide temporary shelter solutions based on a realistic assumptions about time
	Disruption to social network	Consider resettling families and neighbours around
	Inability to expand or complete houses	Consider post occupancy monitoring and future assistance
		Provide necessary technical and financial assistance

Factors influence the desire of the beneficiaries to remain in the resettlement	**Sub factors**	**Actions**
	Climate inadaptability of the houses	Operationalise local knowledge
		Involve local practitioners
	Culturally inappropriate design	
5. Tendency to make economic gain out of houses by selling or letting		Impose strict restrictions for selling and letting
		Implement a compensation procedure rather than providing an extra residence

Appendix 7: Publications of the researcher

Journal papers

- Sridarran, P., Keraminiyage, K., Herszon, L., 2017. Improving the cost estimates of complex projects in the project-based industries. Built Environment Project and Asset Management. Vol 7, Iss 2, pp.173-184, doi: 10.1108/BEPAM-10- 2016-0050.

- Sridarran, P., Fernando, N.G., 2016. Change management framework to enable sustainable outsourcing of facilities management services. Built Environment Project and Asset Management. Vol 6, Iss 3, pp.317-331, doi: 10.1108/BEPAM-08-2014-0041.

Refereed Conference Papers

- Sridarran, P., Keraminiyage, K., and Amaratunga, D. (2017). Adaptable built-environment as a potential strategy to sustain post-disaster resettlements in Sri Lanka. In: Proceedings of 9th International Conference of Faculty of Architecture Research Unit (FARU), University of Moratuwa, Sri Lanka.

- Sridarran, P., Keraminiyage, K., and Fernando, N. (2017). Acceptance to be the Host of a Resettlement Programme: A Literature Review. In: Proceedings of 7th International Conference on Building Resilience; Using scientific knowledge to inform policy and practice in disaster risk reduction, ICBR2017. Bangkok, Thailand.

- Sridarran, P., Keraminiyage, K., and Amaratunga, D. (2017). Enablers and barriers of adapting post-disaster resettlements. In: Proceedings of 7th International Conference on Building Resilience; Using scientific knowledge to inform policy and practice in disaster risk reduction, ICBR2017. Bangkok, Thailand.

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