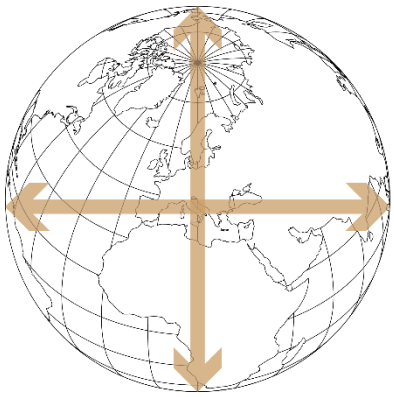

regard

rebuilding after displacement

Output 6: Course Handbook

Mass displacement and Built Environment

Social Policy Analysis and Research Centre,

University of Colombo

Co-funded by the Erasmus+ Programme of the European Union

1) Project Introduction

REGARD (REbuildinGAfteR Displacement), which is co-funded by an EU Erasmus+ programme grant, will run for three years and is led by the University of Huddersfield's Global Disaster Resilience Centre, based in the United Kingdom. They are joined by a consortium of five higher education institutions from four countries in Europe and Asia. This research initiative aims to develop competencies in rebuilding communities following a disaster and conflict induced mass displacements from the perspective of the built environment (BE).

In achieving this aim, the following objectives have been set out:

- To identify the needs of communities following a disaster and conflict induced mass displacements in the perspective of built environment
- To investigate the role of the built environment in enhancing social cohesion between host and displaced communities
- To explore the knowledge, skills and competencies required by built environment professionals to address the needs of the host and displaced communities
- To develop, test and implement an innovative series of training courses in catering the needs of the host and displaced communities
- To develop associated curricula and resources for teachers and learners
- To introduce new uses of ICT in education by formulating technology-enhanced learning environments and materials to facilitate teaching and learning
- To propose policy recommendations to BE professional bodies in upgrading the professional competencies to address the needs of the host and displaced communities

Accordingly, the project will address the needs of the host and displaced communities following disaster and conflict induced mass displacements and facilitate successful resettlement. In

enabling this, the project will address the knowledge gaps of BE professionals and help to improve their competencies. The project also informs policy recommendations to BE professional bodies in upgrading the professional competencies to address the needs of the host and displaced communities. In doing so, the project seeks to develop a number of outputs, organise a number of multiplier events and training activities in rebuilding communities following disaster and conflict induced mass displacements.

Partner countries:

- University of Huddersfield, UK – Lead University
- Lund University, Sweden
- Tallinn University of Technology, Estonia
- University of Central Lancashire, UK
- University of Colombo, Sri Lanka

2) Introduction to the Course

2.1 Course Title: Mass Displacement and Built Environment

2.2 Level: Continuous Professional Development

2.3 Number of Credits: Standard study duration without a credit value

2.4 Duration (number of semesters): 8 hours

2.5 Study Hours: 10 hours (8 study hours + 2 hours for assessments)

2.6 Planned Start Date: January, 2022

2.7 Lead Development/Coordinating University: Social Policy Analysis and Research Centre, University of Colombo, Sri Lanka

2.8 Study Programme/Specialty: Rebuilding after displacement/Built Environment specialisations

2.9 Prerequisite Courses: Introduction to Mass Displacement

2.10 Complementary (subsequent) Courses: Occupation-specific courses for Mass Displacement in the Built Environment

2.11 Course Objectives:

- To explain how mass displacement impacts the Built Environment
- To introduce the terminology, policy and legal frameworks related to mass displacement with specific reference to the Built Environment
- To convey the importance of (temporary, transitional and permanent) housing and explore challenges and opportunities with respect to housing interventions
- To introduce best practices in relation to Built Environment interventions. (including disaster resilience, environmental sustainability, social cohesion, etc.)
- To prepare students for occupation-specific courses

2.12 Key Learning Outcomes:

Having successfully completed the course, the student is able to:

- Understand how mass displacement impacts the Built Environment
- Communicate and discuss issues using appropriate terminology relating to mass displacement with specific reference to the Built Environment

- Appreciate the policy and legal frameworks that apply to mass displacement with specific reference to the Built Environment
- Analyse a mass displacement scenario and anticipate Built Environment-related problems / issues and recommend solutions to them

2.13 How the Outcomes Will Be Achieved

A series of lectures introduce principles, terminology, typologies and relevant frameworks to aid overall understanding of the mass displacement context. A wide variety of case studies are presented encompassing different mass displacement contexts and geographic regions to stimulate a richer and more detailed exploration of the subject matter. Various media and modes of presentation are employed to encourage student interest and motivation to learn more.

Assignments are designed to challenge students to consider issues and discuss them in the light of their own experience and knowledge. In this way they explore what they themselves know about the subject and build upon that—along the lines of problem-based learning. The course is presented as a Massive Open Online Course (MOOC) where the pace of learning is determined by the students themselves according to their own possibilities and preferences.

2.14 Course Content

Main topic	Sub-topics
1. Introduction to the concepts	1.1. What is Displacement? – A quick recap 1.2. Built Environment 1.3. Planned Relocation

2. Mass displacement and the Built Environment	2.1. Built environment in natural disaster induced displacement 2.2. Built environment in conflict induced displacement 2.3. Built environment in development induced displacement 2.4. Complex nature of Built Environment in Mass displacement 2.5 Camp Management
3. Governance in Built Environment in relation to Mass Displacement	3.1 What is Governance? 3.2 International Policy Frameworks on Built Environment 3.2.1 Common Framework for built environment 3.2.2 Built environment and human rights 3.3 Built Environment and Green Economy 3.4 Built Environment and Accessibility 3.5 Building Codes
4. Cross-cutting issues for Built Environment interventions	4.1 Disaster Resilience (including multi-hazard mapping, Build Back Better) 4.2 Green and Sustainable Built Environment (including nature-based solutions) 4.3 Inclusive Built Environment (including supporting vulnerable and special needs groups)
5. Managing Built Environment interventions	5.1 Economics and financing of interventions (including cost benefit analyses, whole life costing) 5.2 Stakeholders of Built Environment interventions (including typical institutional frameworks) 5.3 Ethics and professionalism

6. Housing	6.1 Types and stages of housing (emergency, temporary, transitional, permanent, resettlement, relocation, social housing, etc.) 6.2 The importance of housing (for social cohesion and integration, livelihoods, etc.) 6.3 Inclusive housing (including supporting vulnerable and special needs groups)
7. Infrastructure and associated services	7.1 Water supply, sanitation and hygiene (WASH) 7.2 Access to basic needs and services (food, livelihoods, health, education, recreation, etc.) 7.3 Transport infrastructure and services 7.4 Energy infrastructure and services 7.5 Waste management infrastructure and services (including drainage, wastewater treatment, reuse and recycling of materials, etc.)
8. Lessons learned from Built Environment intervention cases	8.1. Cultural and Economic Appropriateness 8.2. Community and Host Community 8.3 Managing Built Environment Interventions 8.4 Infrastructure and Neighbourhood Facilities

2.15 Trainers

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1. Introduction to Concepts

Introduction and Intended Learning Outcomes

Welcome to the first lesson of this module. This lesson is a quick recap of the concepts you have learned in the first module and an introduction to the concept of 'built environment'. Hence, at the end of this lesson, you will be able to:

- Define what displacement is
- Name the types of displacement
- Recognise the importance of 'built environment' as a concept
- Evaluate various conceptual frameworks on relocation

1.3 What is Displacement? – A Quick Recap

Displacement is a common phenomenon in the contemporary world. In simple terms, displacement is a situation where a person loses their habitat due to various reasons within their home country. The term 'displacement' was coined by Russian-American Sociologist Eugene M. Kulischer with the introduction of the term 'displaced persons' (Kulischer and Jaffe, 1962). Ever since concerns were raised regarding displaced communities, many initiatives emerged on best practices that should and can be practiced by state and non-governmental organisations. Such initiatives include the Sustainable Development Goals (2015-2030), the Sendai Framework for Disaster Risk Reduction (2015-2030), the World Humanitarian Summit (2016), the New York Declaration for Refugees and Migrants (2016), and the Nansen Initiative on Disaster Induced Cross Border Displacement (Terminski, 2013).

First, let us inquire into the difference between an 'internally displaced person' and a 'refugee'. The Guiding Principles on Internal Displacement define an internally displaced person as,

> *Persons or groups of persons who have been forced or obliged to flee or to leave their homes or places of habitual residence in particular as a result of or in order to avoid the effects of armed conflict, situations of generalized violence, violations of human rights, or natural or human-made disasters and who have not crossed an internationally recognized State border* (United Nations, 1999).

On the other hand, the Refugee Convention of 1951 defines a refugee as,

> [one who], *owing to a well-founded fear of being persecuted for reasons of race, religion, nationality, membership of a particular social group or political opinion, is outside the country of his nationality and is unable or, owing to such fear, is unwilling to avail himself of the protection of that country; or who, not having a nationality and being outside the country of his former habitual residence as a result of such events, is unable or, owing to such fear, unwilling to return to it* (UNHCR, 1988).

According to Robinson (2003), an internally displaced person differs from a refugee due to the following two reasons:

1. They have not crossed an international border and thus do not enjoy the protection accorded under international law to refugees and asylum seekers.
2. Their displacement may not be caused by conflict and they may not be fleeing a well-founded fear of persecution. Those displaced by natural disasters and any kind of human-made disasters generally have no reason per se to fear or mistrust state authorities, whether or not they receive help from them.

Therefore, it is important to keep in mind that the concept of displacement is wider than the term refugee.

Fernando, Fernando and Kumarasiri (2009) and Terminski (2013) identify three typologies of displacement: Development Induced Displacement, Conflict Induced Displacement and Natural Disaster Induced Displacement. When understanding these different types of displacements in detail, the following can be noted:

1. Development Induced Displacement: People losing their habitats due to development projects such as dams, highways, or other large-scale construction projects
2. Conflict Induced Displacement: People losing their habitats due to various types of conflicts
3. Natural Disaster Induced Displacement: People losing their habitats due to natural or environmental disasters

Apart from the above categorisation, Climate Induced Displacement is a new typology that has gained much attention with the rise of climate change in the world. Climate risks refer to the combination of the likelihood of the occurrence of a weather or climate event and the consequences of the said occurrence (UNISDR, 2009). It can vary from high risk, intensive climate risks such as hurricanes and large-scale floods to low risk, extensive climate risks such as droughts (Wilkinson et al, 2016). In this context, forced displacement and voluntary migration are also often referred to. According to Hugo (2010), these two categories are two poles of a continuum; many migrants are in the grey, middle zone where aspects of choice and coercion co- mingle (Wilkinson et al, 2016). The majority of climate-induced migrants and displaced people move to urban centres, though the proportion of rural versus urban destinations vary depending on the context (Mosel and Jackson, 2013). The rapid, dynamic features of climate change suggest that the numbers of people moving internally to cities and across borders will likely rise in the coming decades (Milan et al., 2015). However, it has been pointed out that the tendency is for people to remain within their own country and to migrate to more urban settings (Findlay, 2011).

Therefore, displacement can be summarised as a phenomenon that takes place within the national borders of a country due to conflict, disaster and development. Moreover, a novel trend in the displacement discourse is where people are displaced due to climate change repercussions.

1.2 Built Environment

Following the discussion on displacement, this section is dedicated to the next most important concept of this lesson, which is 'built environment'. According to Crowe (1997) this term emerged in the 1980s as an umbrella term for the products and processes of human involvement with the natural environment. Griffiths (2004) describes built environment as a range of practice- oriented subjects concerned with the design, development and management of buildings, spaces and places (Haigh and Amaratunga, 2010).

McClure and Bartuska (2007) have identified four interrelated characteristics of built environment:

1) It is extensive; it is everywhere; it provides the context for all human endeavours. More specifically, it is everything humanly created, modified, or constructed, humanly made, arranged, or maintained.

2) It is the creation of human minds and the result of human purposes; it is intended to serve human needs, wants, and values.

3) Much of it is created to help us deal with and to protect us from the overall environment, and to mediate or change this environment for our comfort and well-being.

4) An obvious but often forgotten characteristic is that every component of the built environment is defined and shaped by context; each and all of the individual elements contribute either positively or negatively to the overall quality of environments both built and natural and to human-environment relationships (p: 5).

To recognise the main essence of the built environment, it is important to inquire about the seven components of the built environment as listed by McClure and Bartuska (2007):

1) Products: Products include materials and commodities created to enhance the human capacity to perform specific tasks.

a) graphic symbols (i.e. letters form words, sentences that combine into paragraphs and chapters)

b) tools (i.e. pen, hammer)

c) materials (i.e. brick, wood)

d) machines (i.e. radio, television)

2) Interiors: Interior spaces are generally created to enhance activities and mediate external factors (i.e. living room, stadium).

3) Structures: Structures are planned groupings of spaces defined by and constructed using products. They have both external and internal forms (i.e. housing, schools, office buildings, highways, tunnels, bridges, and dams).

4) Landscape: Landscapes are exterior areas and/or settings for planned groupings of spaces and structures. This combines the natural and the built environment together (i.e. courtyards, malls, gardens, farms, national forests, and parks).

5) Cities: Cities are groupings of structures and landscapes of varying sizes and complexities, generally clustered together to define a community for economic, social, cultural, and/or environmental reasons (subdivisions, neighbourhoods, districts, villages, towns, and cities of varying sizes).

6) Regions: Regions are groupings of cities and landscapes of various sizes and complexities; they are generally defined by common political, social, economic, and/or environmental characteristics (the surrounding region of cities, counties).

7) Earth: The Earth includes all of the above, the groupings of regions consisting of cities and landscapes—the entire planet, the spectacular, complex, beautiful, still mysterious Earth, which, as human power expands, may be considered the ultimate artefact.

Therefore, the built environment can be defined as a manmade surrounding that encompasses patterns of human activities and comprises land use, urban design and transportation systems (Sridarran, Keraminiyagel, & Amaratunga, 2016, p. 161).

1.2.1 Built Environment and Its Link with Displaced Community

However, built environment can be looked as a physical result of environment, economic, and social aspects of a system. Hence, it is a multidimensional concept which has a complex relationship with all other social elements. Figure 2.1 illustrates the complex relationships of the built environment (Sridarran, Keraminiyagel, & Amaratunga, 2016, p. 161).

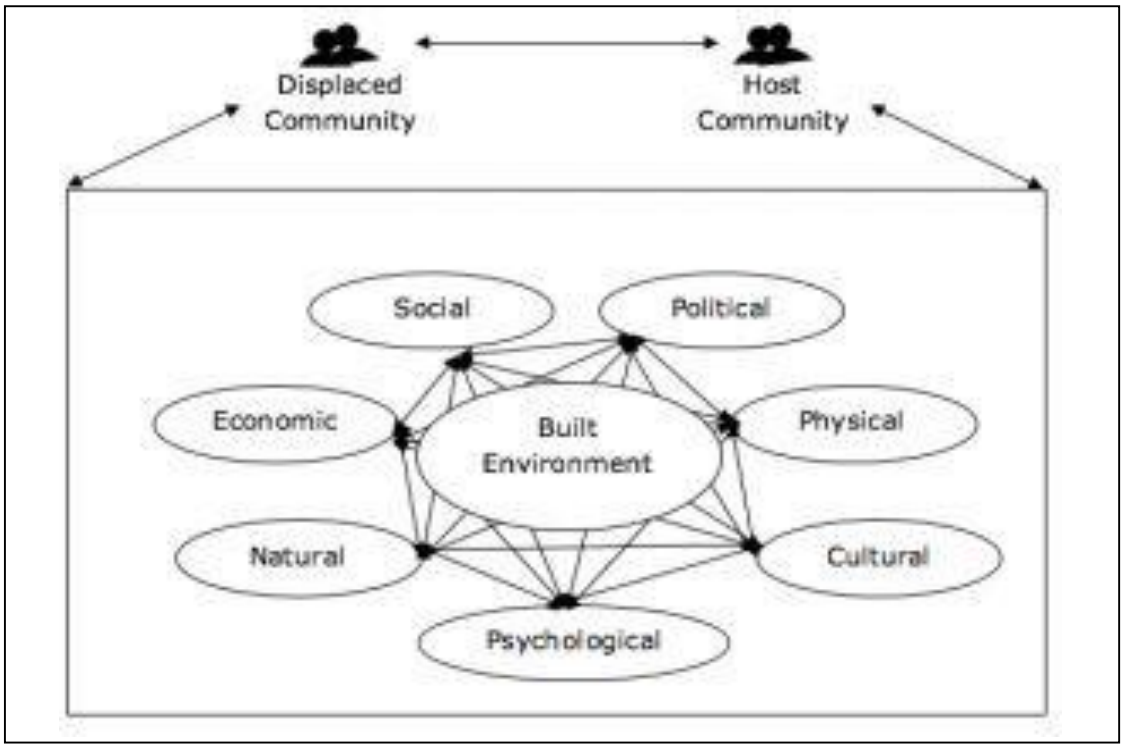

Figure 1.1: Built environment and its interlinks (Sridarran, Keraminiyagel, & Amaratunga, 2016, p. 161)

With this, it is clear that the built environment is a wide space that surrounds us. As mentioned before, this course is focussed on discussing the nexus between the concepts of displacement and

the built environment. Before moving on with this lesson, let us introduce you to another concept that will be useful for this course.

1.3 Planned Relocation

In the context of displacement and built environment, shelter plays a major role. Therefore, as a durable solution, planned relocation will be discussed throughout this module and it is vital that we introduce the concept planned relocation to you before we move forward.

Planned relocation has been recognised as one of the main frequent responses post-displacement (UNHCR, 2014). According to the Oxford Modern English Dictionary (1995), 'resettlement' is defined as *"settle[ing] again"* (p. 920) and 'relocation' is defined as *"locate[ing] in a new place"* (p. 912).When considering the definition of resettlement, settling again could be done in the original setting or in a new setting. Fernando (2009) has pointed out that the definitions of these terms should be considered in the context of physical movement of people to a new place to live in, other than the previous place.

The term 'resettlement' therefore refers to physical, pre-planned relocation, combined with appropriate support mechanisms, including social support in the new location (Terminski, 2013, p. 13). This was earlier elaborated by Chambers in 1969, and according to him, resettlement is characterised by two main features: a movement of population and an element of planning and control. Given that planning is an important element in resettlement, planned relocation is an important concept which is discussed in displacement studies. UNHCR (2014) explains resettlement as a component of planned relocation.

Turton (2006) recognises another aspect in relation to resettlement namely, involuntary and involuntary resettlement. He distinguishes between these two terms based on the consent of the relocatees. Hence, involuntary resettlement is a resettlement process which is done without the consent of the relocatees.

Scudder (2005) has introduced the Stress and Settlement Process of involuntary resettlement which considers the physiological, psychological and socio-cultural stress that people have to deal with throughout the involuntary resettlement process. He further suggests that such stress could be overcome by a proper resettlement plan and perceives that relocation is a long-term process which consist of the following four stages:

1. **Planning and recruitment**: This is the pre-resettled stage which requires a solid plan where the relocatees should be consulted.
2. **Coping and adjustment**: This begins as soon as resettlement takes place. This stage is to be alert about the livelihood and the coping strategies of the relocatees as soon as relocation takes place and the drop that is expected in the livelihood of the relocatees.
3. **Community formation and economic development**: This is the stage where resettlers tend to get used to the new area and consider their economic development. As they adapt to the new surroundings, the initial stage of forming a new neighbourhood and community relationships take place.
4. **Handing over and incorporation**: After successful incorporation to the surrounding, Scudder points out that this is when responsibilities should be handed over to the next generation (Scudder, 2005).

Cernea (2000) took this stance one step further through the conceptual framework of the Impoverishment Risks and Reconstruction Model for Resettling Displaced Population. According to this model, people have risks of economic, social and cultural impoverishment when they resettle in a new location, and preventing them is a challenge for the officers in-charge of the resettlement plan. This model could be used as a planning and monitoring tool, detailing eight possible risks that could influence the resettlement process rather than considering different stages. These risk patterns were identified based on the comparison of empirical studies (Cernea, 1991).

The eight risks are:

- Landlessness
- Food insecurity
- Increased morbidity and mortality
- Loss of access to common property and services
- Social Disarticulation
- Joblessness
- Homelessness
- Marginalisation

1.4 Case Studies

Please refer the following case studies to get an in-depth knowledge of country-specific contexts.

Google Drive Link:

https://drive.google.com/drive/u/1/folders/1_d74hg0MHNXt4JLOb-zMJI-QYsbU5SBm

Sri Lanka – Disaster induced displacement

- Sri Lanka: Floods and Landslides (case study 1)
- The Sri Lanka Tsunami Experience (case study 2)
- Sri Lanka rapid post disaster needs assessment (case study 3)

– Conflict induced displacement

- UNHCR Mid-Year Progress Report 2002 (case study 4)

– Development induced displacement

- A Comprehensive Review of Urban Regeneration Governance for Developing Appropriate Governance Arrangements (case study 5)
- Refugees and Asylum Seekers in Urban Areas: A Livelihoods Perspective (case study 6)

- Pressure and Violence: Housing Renovation and Displacement in Sweden (case study 7)
- The Relationship between Trauma, Post-migration Problems and the Psychological Well-being of Refugees and Asylum Seekers (case study 8)

The next lesson will introduce you to the relationship between displacement and built environment**.**

Chapter Summary

Intended Learning Outcomes	Summary
• Define displacement	• Displacement can be summarized as a phenomenon that takes place within national boarders of a country due to conflict, disaster and development. However, the novel trend in the displacement discourse where people displaced due to climate change repercussion
• Name the types of displacement	• The types of displacement ↓ Disaster induced displacement ↓ Conflict induced displacement ↓ Development induced displacement ↓ Climate induced displacement
• Recognise the importance of 'built environment' as a concept	• The built environment can be defined as a manmade surrounding that encompasses patterns of human activities and comprises land use, urban design and transportation systems
• Evaluate various conceptual frameworks on relocation	• Planned relocation ↓ Stress and Settlement Process of involuntary resettlement ↓ the Impoverishment Risks and Reconstruction Model for Resettling Displaced Population

References and Recommended Reading

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Findlay, A.M. (2011) 'Migrant destinations in an era of environmental change'. *Global Environmental Change,* 21(1), pp. 50-58.

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2. Mass Displacement and the Built Environment

Introduction and Intended Learning Outcomes

This lesson will be the stepping stone to the main theme of this module. This lesson will make you understand the relationship between displacement and built environment. Hence, at the end of this lesson, you will be able to:

- Identify the built environment in natural disaster induced displacement
- Identify the built environment in conflict induced displacement
- Identify the built environment in development induced displacement
- Recognise contextual differences between mass displacement and built environment

In the context of relocation of a population, Sridarran (2018) emphasises the important role played by built environment in the relocation process. She states that relocation is not only a process of building houses but also a process of introducing an entirely new built environment to the people attributing resilience measures for recovery. In this process, both human activities and the built environment are expected to adjust to each other (Sridarran, 2018).

2.1 Built Environment in Natural Disaster Induced Displacement

Forced displacement and migration are shaping the 21st century (Eikenberg, 2019, p.1) The boundaries between displacement and migration are blurred and the reasons for both are various: climate change that destroys the livelihoods of whole populations, environmental pollution,

natural disasters, violent conflicts as well as the widening gap between winners and losers of globalisation (Eikenberg, 2019, p. 2). Therefore, it is equally problematic trying to classify migrants and labelling them based on the cause of migration—war, economic reasons, development projects, poverty or environmental disasters (Eikenberg, 2019). Given that we have already discussed what built environment is, it is vital to understand the role of built environment in disaster induced contexts.

When considering built environment in the context of housing conditions, especially in developing countries, incompatible houses is one of the key reasons for the refusal of relocation (Sridarran, Keraminiyagel, & Amaratunga, 2016). A study conducted by Barenstein (2015) in post-earthquake Gujarat, India shows that almost 90% of people were dissatisfied with their new houses owing to cultural inappropriateness. Therefore, constructing houses according to a built environment scope with a holistic view could perhaps reduce the above-mentioned issues. However, on the other hand, offering financial assistance to affected people to build their own houses could be an easy way of eliminating these issues as well (Sridarran, Keraminiyagel, & Amaratunga, 2016, p. 162) These issues will be discussed in detail in later chapters.

Moreover, the urban built environment is also important in disaster induced displacement. The role of the urban built environment in fostering disaster resilience has been recognised for some time. However, it has been difficult to translate this potential into practice (León, Mokran, Catalán, Cienfuegos, & Femenías, 2019). This is especially challenging in the case of rapid onset crises such as near-field tsunamis when appropriate urban forms must support the populations' ability to autonomously carry out safe and timely responses (León, Mokran, Catalán, Cienfuegos, & Femenías, 2019). Literature illustrates the role of urban form as an essential tool for responding to rapid onset tsunamis, particularly by supporting safe and effective evacuations of the population. For example, the earthquake and tsunami-prone city of Viña del Mar, Chile reveals two different scales: the macro-scale of urban configuration and the micro-scale of built environment conditions experienced by the evacuees during a likely evacuation (León, Mokran, Catalán, Cienfuegos, & Femenías, 2019, p. 4).

2.2 Built Environment in Conflict Induced Displacement

The cause of displacement related to the escalation of violence is the conflict between at least two players for control over a particular territory (Terminski, 2012, p. 1). Conflict is also a cause of disaster-induced displacement. The territory is in fact the arena of specific conflict between man and the destructive impact of the forces of nature (Terminski, 2012, p. 2) The best-known category of internal displacement is associated with the escalation of violence, internal armed conflicts or discrimination against particular groups of people (Terminski, 2012, p. 2). For example, in Africa the problem of conflict induced displacement is often associated with the fall of the state (e.g. Somalia, the Democratic Republic of Congo). Some local conflicts in the developing world are associated with initial displacement on a large scale, but their short duration makes it very hard to estimate the number of displaced people accurately. In such cases, the displaced people may return to their previously inhabited territories within a few months of the outbreak of the conflict. Due to the rapid dynamics of internal conflicts, the annual scale of this problem is difficult to be assessed correctly (Terminski, 2012, p. 3).

Following disaster and conflict induced displacement, resettlement and relocation are integral parts of the recovery process (Sridarran, 2018, p. 15). The most popular aspect of the recovery process is addressing the physical needs of the displaced community which may vary from providing basic necessities such as food, water, sanitary facilities to new houses and infrastructure facilities (Sridarran, 2018, p. 15). However, this process goes beyond addressing the physical needs of communities. It also includes addressing socio-cultural, livelihoods and economic aspects of their lives (Malalgoda, Jayakody, Madurapperuma, & Amaratunga, 2020, p. 72).

Relocation and resettlement often introduces a new built environment for displaced communities which changes the pattern of interaction among the displaced community and also with the host community (Malalgoda, Jayakody, Madurapperuma, & Amaratunga, 2020, p. 72). However, failure regarding built environment has been recorded based on inappropriate house designs, insufficient infrastructure, and inappropriate new environments resulting in social tension among the communities (Malalgoda, Jayakody, Madurapperuma, & Amaratunga, 2020). Further, the

economic status of the displaced community, bureaucratic tendencies of the government and issues of discrimination are also recorded as reasons for failures linked with changes in the built environment. The built environment has an instrumental role to play in all these aspects which includes physical, psychological, socio-cultural, institutional, environmental and economic factors (Malalgoda, Jayakody, Madurapperuma, & Amaratunga, 2020, p. 73).

2.3. Built Environment in Development Induced Displacement

No precise data exists on the numbers of persons affected by development induced displacement throughout the world (Stanley, 2013). For an indication of magnitude, most scholars, policymakers, and activists rely on the World Bank Environment Department's (WBED) estimate that roughly 10 million people are displaced each year due to dam construction, urban development, transportation and infrastructure programmes (Stanley, 2013, p. 1). A count that considers this wider conception of development induced displacement would in fact be much higher than the WBED's estimate. Furthermore, the global count of displaced communities would increase if one considered displacement stemming from development projects other than those included in the WBED's count, such as natural resource extraction projects, as well (Stanley, 2013).

More development induced displacement can be seen in the developing regions of Asia and Africa (Terminiski, 2013). Some of the examples include the construction of the Three Gorges Dam in China that displaced 1.13 million people for more than two decades (Wilmsen 2016) and the development of the Marange Diamond fields in the Chiadzwa area in Zimbabwe that led to resettlement of 4,700 Chiadzwa villagers. The Kariba Dam construction in Zambia displaced approximately 57,000 people (Stanley 2004). In Uganda, the proposed construction of the oil refinery at Kabaale parish in Hoima District led to displacement of 1221 households affecting over 7000 people (Ministry of Energy and Mineral Development 2012). In Ghana, Boohene and Peprah found that most fishermen and fish mongers including their dependants were displaced in oil production areas (2011). The consequences bring about changes in the ways people live, play, work and relate to each other and cope as a community (Bozigar et al., 2015).

Therefore, addressing these risks associated to development induced displacement and resettlement could contribute towards minimising socio-economic vulnerability associated with large-scale development projects among affected communities. However, when we consider this as per the built environment concept, proper planning and implementation of resettlement processes are necessary for social issues to be sustainably handled (Aboda, Mugagga, Byakagaba, & Nabanoga, 2019).

2.4 The Complex Nature of Built Environment in Mass Displacement

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). We hope you can recall that we have already discussed this in lesson 1. Unlike built environment, which is a man-made 'physical' system with a tendency to deteriorate as the community population grows with time, all other subsystems are typically outcomes of self-organisation, social learning, and functional persistence of a community (Moffatt & Kohler, 2008, p. 250). However, it becomes a subsystem of a community as it is shaped by the interaction of people. 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 (Sridarran, 2018).

Displaced people in urban areas face a multitude of problems related to built environment, in particular, lack of access to adequate housing and tenure (Sitko & Massella, 2019, p. 12). It is helpful to think of built environment as two parts.

First, urban form, which is the overall form or shape of a town or city based on its parts (Sitko & Massella, 2019). For example, urban form includes the layout of roads and streets and the location, size and shape of open spaces designed for purposes such as rainwater catchment or recreational parks (Sitko & Massella, 2019). Urban form influences access to jobs, basic needs and general well-being. The quality of roads, affordability of public transport services and safety of services are directly linked to the degree to which people are able to travel for economic or

social purposes. Moreover, formal and informal governance mechanisms regulate mobility (Sitko & Massella, 2019, p. 13 - 14).

Second, land tenure, which addresses systems of land rights, ownership and use and security should be considered closely in relation to adequate and affordable housing (Sitko & Massella, 2019). The challenge to finding affordable housing and land often leads people to live in precarious conditions in poorly serviced and hazard-prone areas on the outskirts of an urban area. It is common to find displaced people living in makeshift houses in public or private land, occupying abandoned homes or unfinished buildings, sheltering in public buildings such as schools or community centres without permission, or renting at inflated prices with no security of tenure (Sitko & Massella, 2019, p. 14).

As is the pattern for most systems, local authorities are primarily responsible for regulating the development of large-scale urban form, including roads and public spaces, such as parks, and public buildings, such as schools or hospitals (Sitko & Massella, 2019). It is also responsible for tenure administration, building codes and regulations that guide construction and regulation of the built environment. Other actors aim to support and strengthen a number of activities related to the design, construction and maintenance of the built environment (Sitko & Massella, 2019, p. 14).

2.5 Camp Management

We have already learned that displacement takes place due to disaster, conflict situations and development initiatives. Displacement makes people homeless and temporary camps play a major role in terms of built environment interventions. For those who have lost property, lived through traumatic events, and are suddenly stranded or displaced outside the safeguards of their own homes and communities, camps can offer a safe haven in terms of receiving medical treatment, food, shelter, and other basic services. While camps cannot provide permanent sustainable solutions, if they are well-managed, they can temporarily meet the human rights of displaced populations and provide them with temporary refuge (International Organization for

Migration (IOM), Norwegian Refugee Council (NRC) and UN Refugee Agency (UNHCR), 2015).

Camp management is a mechanism which makes sure that camps which hold displaced communities abide by the standards and rights that have been pointed out by the international legal instruments which can be listed as follows:

- Convention Relating to the Status of Refugees 1951 and the Protocol of 1967
- The Universal Declaration of Human Rights 1948
- The Geneva Conventions of 1949 and the two Protocols of 1977
- The Guiding Principles on Internal Displacement 1998

Camp management is an integral part of humanitarian practice and should abide by the following humanitarian principles:

- Humanity: Human suffering must be addressed wherever it is found. The purpose of humanitarian action is to protect life and health and ensure respect for human being.
- Neutrality: Humanitarian actors must not take sides in hostilities or engage in controversies of a political, racial, religious or ideological nature.
- Impartiality: Humanitarian action must be carried out on the basis of need alone, giving priority to the most urgent cases of distress and making no distinction on the basis of nationality, race, gender, religious belief, class or political opinions, and
- Operational independence: Humanitarian action must be autonomous from the political, economic, military or other objectives that any actor may hold with regard to areas where humanitarian action is being implemented (CCM Cluster and IOM, 2021).

The Camp Management House mentioned below provides a visual aid that is frequently used to elaborate how the Camp Management Agency communicates with and coordinates with a wide range of actors to ensure the rights of the camp population. Camp management consists of aiding and protecting displaced populations living in camps according to the legal protection framework and minimum humanitarian standards, thus ensuring that affected populations participate in daily camp activities. The Camp Management House illustrates that camp management implies a holistic approach and a cross-cutting sector response. Camp management is both technical and social in its aim (International Organization for Migration (IOM), Norwegian Refugee Council (NRC) and UN Refugee Agency (UNHCR), 2015, p. 15).

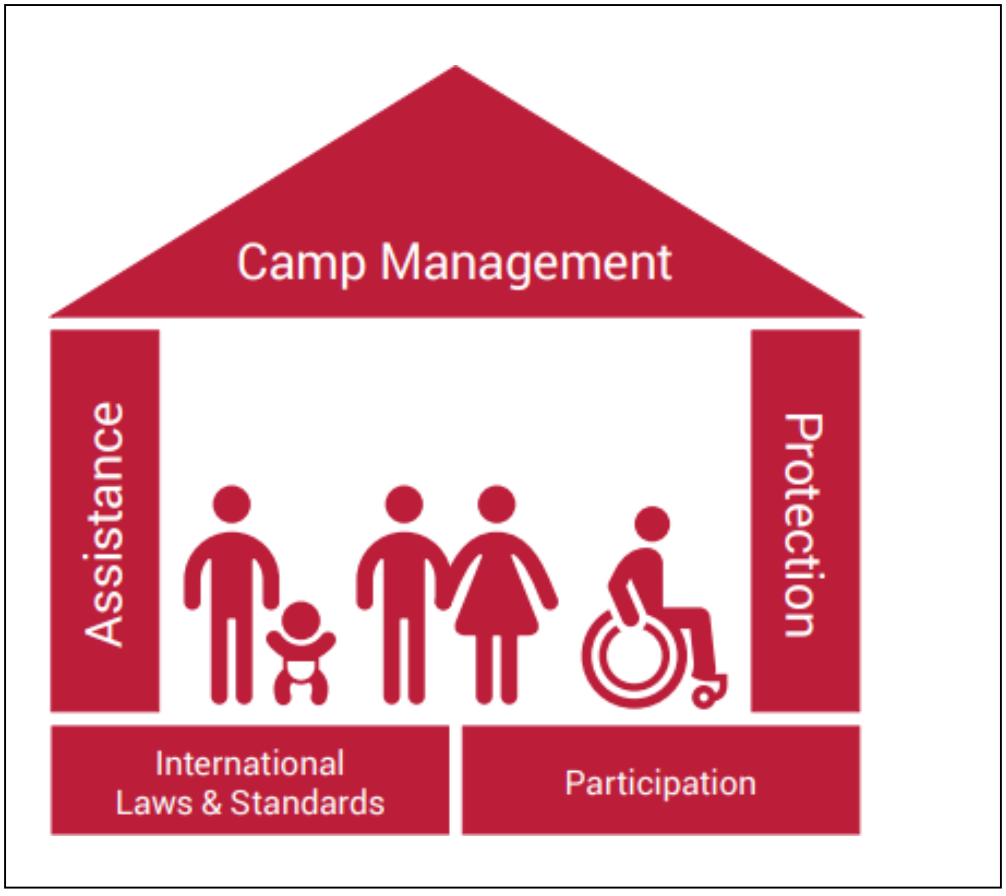

Figure 2.1: Camp Management House (Source: International Organization for Migration (IOM), Norwegian Refugee Council (NRC) and UN Refugee Agency (UNHCR), 2015, p. 14)

When considering camp management as a temporary built environment intervention, the following types of shelters can be recognised:

Type of Shelter	Characteristics
Planned camps	Planned camps can be located in urban or rural locations. They are places where displaced populations live in purposely constructed sites and have a dedicated management team. Services in planned camps can include water supply, food distribution, non-food item distribution, education and healthcare from humanitarian agencies or existing municipal infrastructure. These services are typically only for the people living on the site.
Self-settled camps	Displaced groups, often family or related groups, may self-settle in urban or rural sites on their own. These types of camp-like settings are typically independent of assistance for some time and may exist without receiving any external or formal humanitarian support. Self-settled camps are often situated on privately owned land. They are characterised by limited or no negotiations with the local population or private Minimum Standards for Camp Management – Field Testing Edition 9 owners over use or access. In some cases, a camp management agency may operate nearby and learn about the displaced persons' needs and try to bring them into the management structure so they can receive assistance.

Collective centres	Displaced people may find accommodation in existing public buildings and community facilities, for example schools, factories, barracks, community centres, town halls, gymnasiums, hotels, warehouses, disused factories and unfinished buildings. These were likely not constructed as accommodation. They are often used when displacement occurs in or to an urban setting. Similar to a camp, a collective centre is meant only as temporary or transit accommodation. Levels of assistance vary from full to differing levels of self-reliance, and collective centre management can play a strong role in coordinating services.
Reception and transit centres	Reception and transit centres may be needed at the start of an emergency as temporary accommodation before people are transferred to a suitable, safe, longer-term location, or at the end of an operation as a staging point of return. They are, therefore, usually either intermediate or short-term and may also host returnees. Transit centres typically also provide more services to the population and only indirectly engage their communities in participation activities or decision-making.

Emergency evacuation centres	Emergency evacuation centres are set up to provide appropriate temporary shelter for persons fleeing a specific and immediate threat, such as natural hazards like cyclones, fires and flooding. Schools, sports arenas and religious or civic buildings are often used. They should be prepared and planned for in advance of disaster events where and when possible. Central authorities need to plan for the number of people per night, along with the estimated population flow.
Outside camp or area based approaches	Outside camp or area based (sometimes referred to as 'neighbourhood') approaches apply to designated geographical areas and can take place in urban, peri-urban or rural settings. Activities are delivered by a mobile team with adaptable skills and profiles. Their work focuses on setting up a centre to deliver site management services to people living in the entire community, both host and displaced. Accommodation can include rented premises and spontaneous settlements. They are most frequently used in dispersed and hard-to-reach displacement settings. They have short lifespans as they are used for evolving emergency situations and should be closely aligned with national structures.

Table 2.1: Types of temporary shelters in camp managements (Source: CCM Cluster and IOM, 2021, p. 8-9).

The following figure depicts the connection among the above-mentioned built environment interventions in camp management:

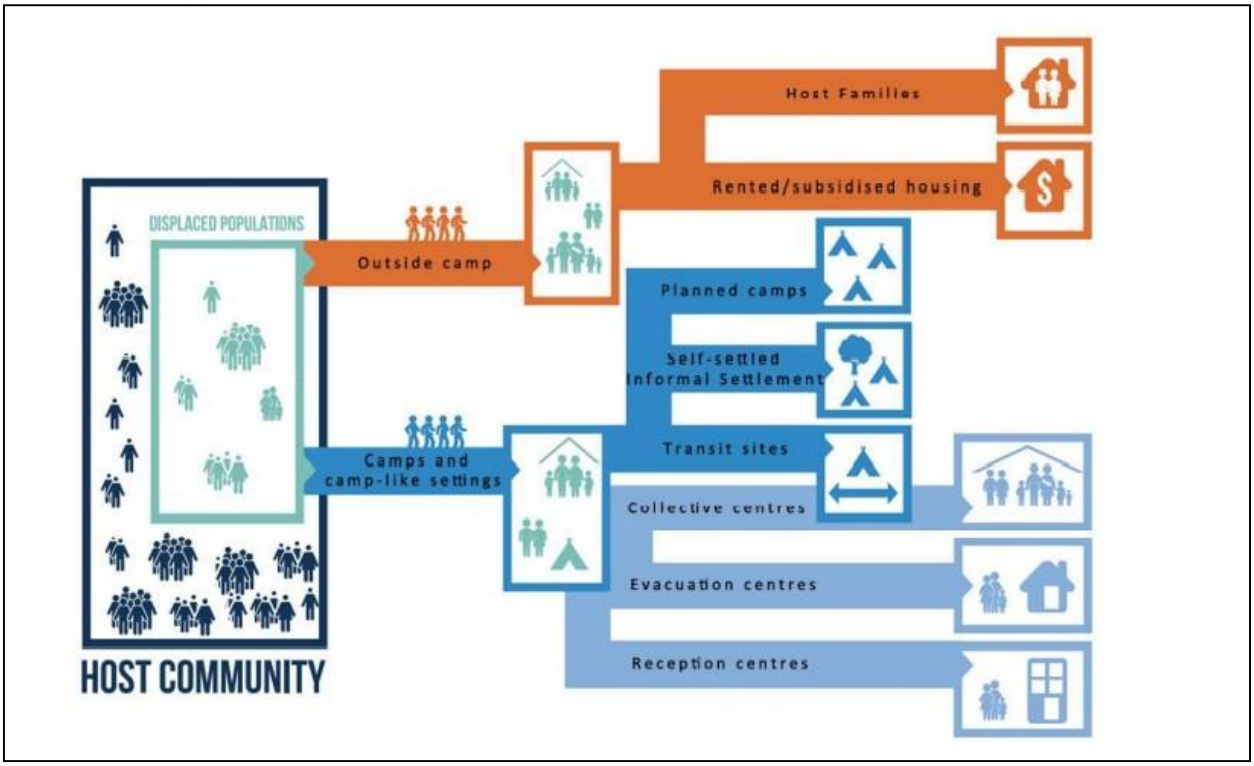

Figure 2.2: Relationship among built environment interventions in camp managements (Source: CCM Cluster and IOM, 2021, p. 8)

2.6 Case Studies

Google Drive Link:

https://drive.google.com/drive/u/1/folders/1a3MzDD_gCYjtBX0CvyRDkfNux7BwE-jO

* Industrialised countries versus developing countries

- UNHCR Global Trends Forced Displacement in 2020 (case study 9)
- Climate Change, Disaster, Displacement and Migration: Initial Evidence from Africa (case study 10)

- Voluntary or Involuntary Relocation of Underserved Settlers in the City of Colombo as a Flood Risk Reduction Strategy: A Case Study of Three Relocation Projects (case study 11)
- Voluntary and Involuntary Resettlement in China: A False Dichotomy? (case study 12)
- Global Overview 2015: People Internally Displaced by Conflict and Violence - Protracted Displacement in Sri Lanka (case study 13)

In the next lesson you will be introduced to the governing structures that are relevant to built environment in terms of displacement.

Chapter Summary

Intended Learning Outcomes	Summary
• Identify the built environment in natural disaster induced displacement	• Built environment in the context of housing conditions, especially in developing countries; incompatible houses is one of the key reasons for the refusal of relocation. • The urban built environment is also important in disaster induced displacement
• Identify the built environment in conflict induced displacement	• Built environment has an instrumental role in all these aspects which includes physical, psychological, socio-cultural, institutional, environmental and economic factors.

• Identify the built environment in development induced displacement	• The risks associated with development induced displacement and resettlement could contribute towards minimising socio-economic vulnerability associated with large-scale development projects among affected communities. • However, when we consider this according to the built environment aspect, proper planning and implementation of resettlement processes are necessary for social issues to be sustainably handled.
• Understand the complex nature of built environment in mass displacement	• Built environment is in itself a system with unique characteristics as it shares the b o u n d a r i e s o f s o c i a l a n d n a t u r a l environments
• Identify the built environment in camp management	• Camp management is a mechanism which makes sure that the camps which hold the displaced community are abiding by the standards and rights that have been pointed out by the international legal instruments.

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3. Governance in Built Environment in Relation to Mass Displacement

Introduction and Intended Learning Outcomes

After introducing you to the main concepts of this module and the relationship between built environment and mass displacement, this lesson will introduce you to the main governing structures that are related to the nexus between built environment and mass displacement.

Therefore, at the end of this lesson, you will be able to:

- Evaluate the relationship between governance and built environment
- Recognise various forms of governance in relation to built environment
- Recognise the need of the building code in the context of built environment
- Analyse the role of sustainable development in built environment

3.1 What is Governance?

Before moving forward with the lesson, it is vital for you to gain knowledge on the concept of governance. Governance can be interpreted as an intended activity undertaken by one or more actors who seek to shape, regulate or attempt to control human behaviour in order to achieve a desired collective end (Dean, 2009). Governance, which is considered part of the political sciences and is differentiated from government as a system for decision making and social order through demands for globalisation and sustainable development, emerged as a topic in its own right (Gilham and Ebohon, n.d., p. 2).

3.1.1 Built Environment and Governance

With the introduction of sustainable development discourse, there was a solid policy background in place for built environment. Based on this, governments all over the world have introduced construction codes that, for instance, stipulate how much energy a building should consume (that is, addressing urban sustainability) or how long a building should be able to withstand a fire (that is, addressing urban resilience). On the other hand, governments all over the globe are now participating in government-to-government networks such as the ICLEI (Local Governments for Sustainability), and share information and best practices about addressing urban sustainability and resilience in novel ways. Businesses and civil society groups have taken up the challenge by introducing their own regulations and governance programmes that seek to improve urban sustainability and resilience (Heijden, 2014). There is also a trend of governing tools emerging to ensure quality in the built environment sector. A few examples for such tools are the BRE Environmental Assessment Method (BREEAM) and Leadership in Energy and Environmental Design (LEED) (Heijden, 2014).

These governance tools and the involvement of other stakeholders such as civil societies have created a shift from government to governance as pointed out by Rhodes (1997). However, Vanegas, DuBose and Pearce (1995) and Bourdeau et al. (1998) have shown how the built environment sector should go beyond quality and cost considerations to social context related issues such as equity and inclusivity.

3.2 International Policy Frameworks on Built Environment: Two Examples

In this section, you will be introduced to two standards introduced related to developing a ‘common framework’ for built environment.

3.2.1 Common Framework for Built Environment

The International Council for Research and Innovation in Building and Construction (CIB) has introduced two main frameworks on built environment. First in 1999 Agenda 21 on Sustainable

Construction and the second in 2002 Agenda 21 for Sustainable Construction in Developing Countries which is a discussion document. This was done in collaboration with UNEP-IETC.

> *The CIB Agenda 21 was intended as a global intermediary between the international Agendas, and national/regional Agendas for the built environment and the construction sector. Its main objectives were to create a global framework and terminology that will add value to all national or regional and sub-sectoral Agendas and to provide a source document for defining research and development activities related to sustainable construction* (Plessis, n.d., p. 1).

As per Gilham and Ebohon (n.d.) CIB reference documents have the following key components:

(i) Vision or Purpose component

(ii) Stakeholder component

(iii) Key Drivers component

(iv) Capacity component

The 2002 guidelines which was a result of a project conducted in collaboration with UNEP- IETC, were targeted towards developing countries specifically as it was understood that their country profiles require an alternative approach towards a common framework in relation to built environment. Such countries carry an inherent governing structure, different levels of skills, a different culture and a world view. The consultation process covered the following in terms of built environment:

- Different regional understandings of sustainable construction
- Issues and challenges faced by the regions

- The impact of the construction industry on the economy, the environment and society in the regions
- Barriers to sustainable construction
- The strengths and opportunities presented by the cultures and traditional practices of the regions
- Suggested actions for the research community, governments and the construction industry

3.2.2 Built Environment and Human Rights

In 2019, a discourse was created on integrating human rights into the built environment. The Institute for Human Rights and Business (IHRB), Raoul Wallenberg Institute of Human Rights and Humanitarian Law, the Australian Human Rights Institute at the University of New South Wales, and the Rafto Foundation for Human Rights compiled a document consisting of draft principles for dignity in the built environment. The overreaching principles of the said framework are as follows (throughout all stages of the built environment lifecycle):

- All human rights standards are upheld, including the cross-cutting principles of transparency, accountability, participation and non-discrimination.
- Everyone has the opportunity to participate meaningfully in the decisions that affect their neighbourhoods and lives. This includes women, children, minorities, migrants, refugees, indigenous peoples, persons with disabilities, older persons and others whose perspectives are often excluded.
- Trade unions and civil society can operate freely.
- All decisions are free from corruption.

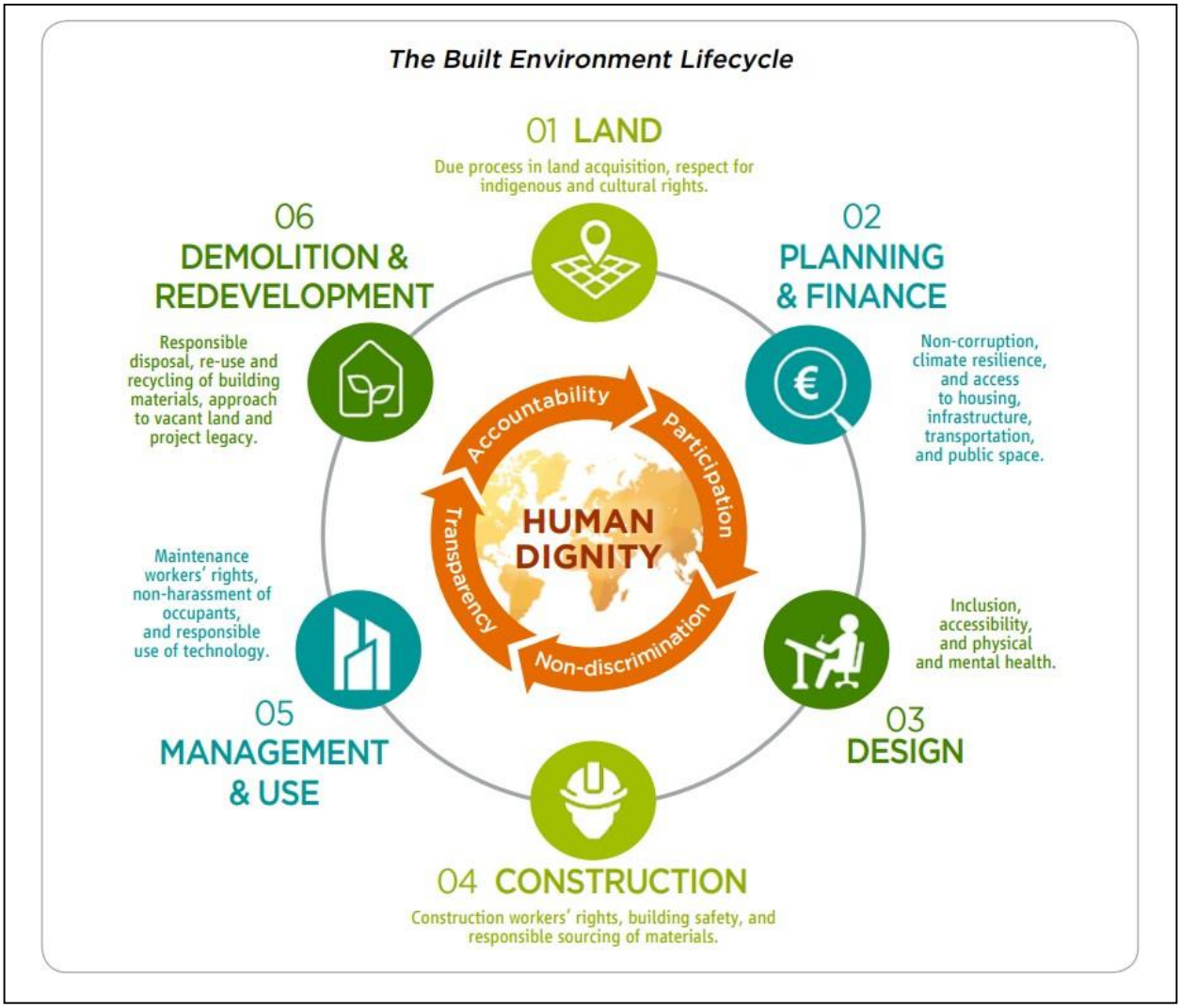

Figure 3.1: Operationalisation of the integration of human rights in built environment (IHRB, 2019, p. 2)

As illustrated in Figure 3.1, the built environment lifecycle starts from land and ends with demolition/re-development. As per the given principles, the core value will be human dignity supported by other values of accountability, participation, non-discrimination, and transparency. The operationalisation of these principles were recognised to be done by the following stakeholders which has been mapped out in Figure 3.2:

Figure 3.2: Operationalisation of the integration of human rights in built environment (IHRB, 2019, p. 3)

3.3 Built Environment and Green Economy

Green economy is a contemporary discourse where attention of the contemporary development model changes from the economy to the environment. Newton and Newman (2015) recognise push and pull factors that trigger such transformation. Push factors are those capable of innovation. It includes new technologies as well as business strategies, practices, government policies and programmes that are necessity to facilitating this new economy. The pull factors are

challenges that affect the creation of sustainable and resilient built environments (Pearson, Newton and Roberts, 2014).

For such a transformation, a range of (green) physical infrastructure is required to support urban living: transport, energy, water, waste, communications and buildings. The consensus is that the sustainability performance of each is currently poor, given that they all emerged in an era where there were few resource and climate constraints. The next generation infrastructure and urban designs will need to demonstrate significantly greater eco-efficiency and resilience in their operation than those that they need to replace (Engineers Australia, 2010). The demand for new urban infrastructures and green services represents the trigger for a raft of innovative infrastructure technologies to move more widely into the urban marketplace (Newton, 2014). In the energy sector, this relates primarily to renewable energy and the speed with which it can penetrate a currently dominant fossil fuel-based regime. The resistance faced by countries with significant fossil fuel endowments or dependencies is shaped by the threat to business and investors holding the wrong assets. Recent divestment of fossil fuel stocks is a signal that green capitalism will also be based on creative destruction (Mcglade and Elkins, 2015). However, in this era which is increasingly centred on new technologies that out-perform existing technologies on sustainability criteria, there will need to be widespread acceptance of rapid change across all industry sectors (Newton and Newman, 2015, p. 9420-21).

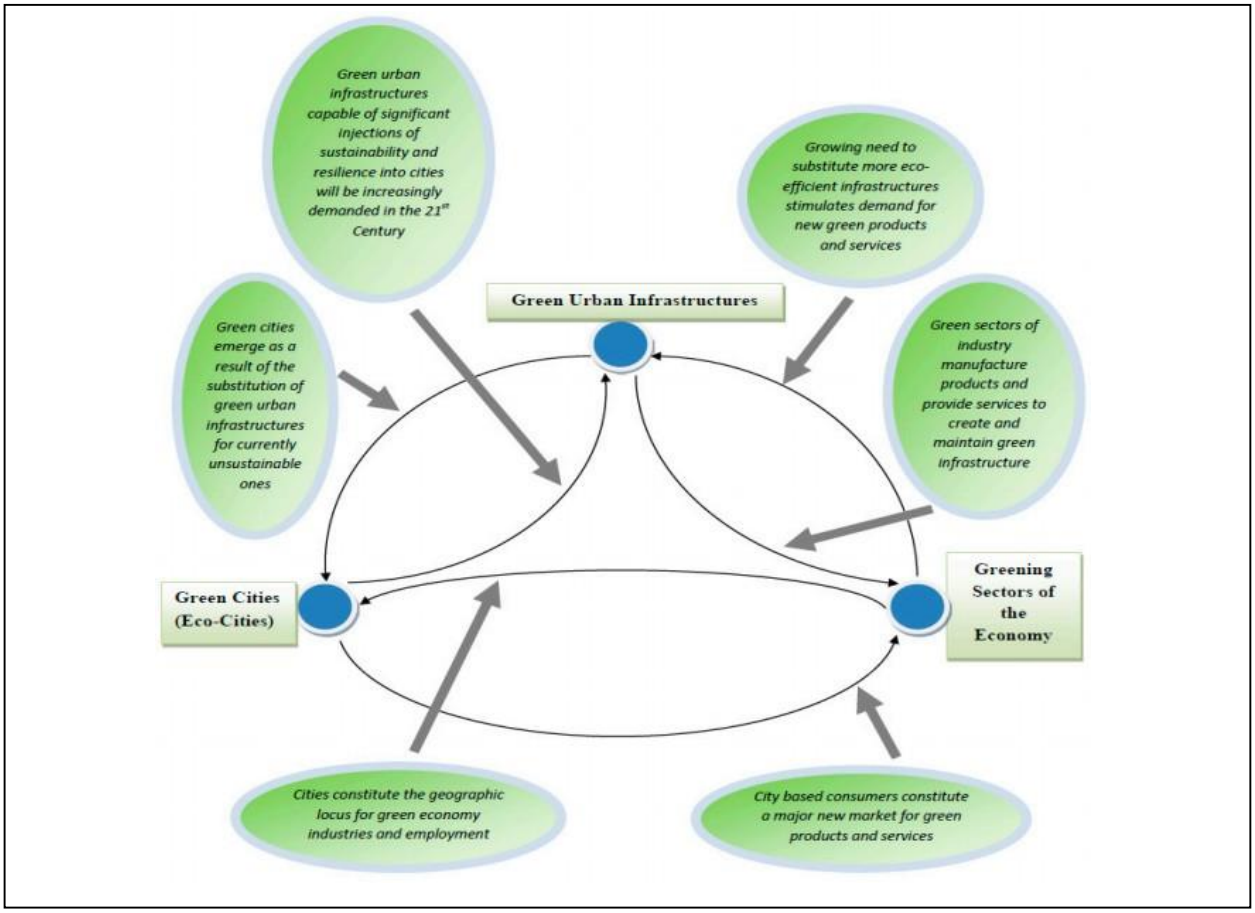

Figure 3.3: Critical connections: green economy, green urban infrastructure and green (eco) cities (Newton and Newman, 2015, p. 9421)

The above figure depicts the role of the built environment in the notion of green economy. It has three interconnected layers of green urban infrastructure, green cities and greening sectors of the economy.

3.4 Built Environment and Accessibility

Given that sustainable development endorses 'leaving no one behind', the discourse of accessible built environment came into dialogue. Valdes (1998) defines accessibility as provision of 'flexibility' to accommodate each user's needs and preferences. Further, accessibility as a human right has been recognised in several international instruments such as the Universal Declaration

of Human Rights, the International Covenant on Economic, Social and Cultural Rights and the International Covenant on Civil and Political Rights.

Further, accessibility of built environment became a main point of advocacy among communities with disabilities. This discourse was formalised in many international instruments and platforms dedicated for people with disabilities. The World Programme of Action concerning Disabled Persons states that accessibility in the general systems of society, such as the physical and cultural environment, housing and transportation, social and health services, educational and work opportunities, cultural and social life, including sports and recreational facilities is essential to furthering its development objective of equalisation of opportunities (UN/DESA, 2013, p. 8). Further, Rule 5 of the United Nations Standard Rules on the Equalization of Opportunities for Persons with Disabilities and Article 9 of the Convention on the Rights of Persons with Disabilities refer to environmental accessibility.

Equally important is the contribution of universal design concepts and principles in promoting accessible, functional and usable solutions for all. This has moved the accessible design discourse beyond a concern with provision of accessibility in the public arena for specific groups to consideration of options that reduce barriers to choice and use and produce solutions that are intuitive, easy to use and require minimum effort for all to enjoy in a range of environments—public and private—and in services and consumer goods. Universal design is not a style but an orientation to design (UN/DESA, 2013, p. 20).

A United Nations expert meeting identified a set of universal design principles appropriate for the built environment:

- Equitable use: the design is useful and relevant to a wide group of users
- Flexibility in use: the design accommodates a wide range of individual preferences and abilities
- Simple and intuitive use: the design is easy to understand regardless of the knowledge, experience, language skills or concentration level of the user

- Perceptive information: the design communicates information effectively to the user regardless of the ambient condition or the sensory abilities of the user
- Tolerance for error: the design minimises the hazards and adverse consequences of unintended actions by the user
- Low physical effort: the design can be used easily, efficiently and comfortably with a minimum amount of fatigue
- Size and space: the size and space for approach, reach, manipulation and use should be appropriate regardless of the body size, posture or mobility of the user (Mace, 1997)

3.5 Building Codes

The main purpose of building codes is to protect health safety and welfare of the public. As per the American Institutes of Architects (n.d.), building codes have the following benefits:

- Cost savings in construction, building operations and maintenance by incorporating the latest technology and construction methods
- Improves building safety for all users
- Accommodates alterations to existing buildings with reasonable requirements and construction costs
- Enhanced resilience of structures, resulting in less property damage and loss in natural disasters
- Lower insurance costs for owners
- Uniformity and consistency in codes provides predictability for developers, owners and contractors
- Streamlined education, training and enforcement for jurisdictions

However, it is important to note that these codes are not an exception to criticism. The American Institute of Architects (n.d.) points out the following issues in implementing a building code:

- Consideration of local adoption or amendments to respond to extreme variations in regulations compared to adjacent states (home rule vs. statewide regulation)
- Working collaboratively across jurisdictions to achieve uniformity and consistency in codes; creating an even playing field and predictability
- Adopting reasonable amendments to model codes to address issues such as construability or adding more options for paths to compliance with updated regulations
- Educational programmes to train local contractors and subcontractors on new technology and requirements.

The International Building Code 2018 can be used as an interesting case study to understand building codes in detail. According to this building code, it is a requirement to include overall features from administration to interior. It claims that a building code should refer to the following:

- Scope of administration
- Occupancy classification and use
- Special detailed requirements based on occupancy and use
- General building heights and areas
- Types of construction
- Fire and smoke protection features
- Interior finishes
- Fire protection and life-safety systems
- Means of egress
- Accessibility
- Interior environment
- Exterior walls
- Roof assemblies and rooftop structures
- Introduction to structural provisions
- Structural design
- Special inspections and tests
- Souls and foundations

- Concrete
- Aluminum
- Steel
- Masonry
- Wood
- Plastic
- Electrical
- Mechanical
- Safeguards during construction
- Glass and Glazing
- Plumbing
- Gypsum board, Gypsum panel products, and plaster
- Elevators and conveying systems
- Special construction
- Encroachments into the public right-of-way

3.6 Case Study: Resilient Housing in Sri Lanka

In this section, we will introduce you to a case study from Sri Lanka. This is to show you how built environment government is related to mass displacement. This study is related to disaster induced displacement.

The National Building Research Organisation (NBRO) is a vital organisation in terms of built environment in Sri Lanka. The NBRO, which operates under the vision 'creating a safer built environment' has extended its studies on disaster resilient construction. In its initial phase, the main focus of these studies was on the housing sector after considering the frequency of natural disasters and severity of damages on houses caused by them. Therefore, the NBRO recommends incorporating disaster resilient features into housing construction when sites are located in localities prone to disasters such as floods, landslides, high wind, and tsunamis or in areas with expansive soil erosion. In this context, the Human Settlements Planning and Training Division of the NBRO initiated a programme to construct disaster resilient model houses in disaster-prone areas with the consent of the Ministry of Disaster Management. In this project, disaster resilient

features are showcased in hazard-prone areas through model houses to enhance awareness within the community on disaster resilient construction.

According to the Hazard Resilient Housing Construction Manual developed by the NBRO, residential buildings are composed of structural and non-structural components in which numerous types of material are used. Foundations, columns, beams, walls, floor slabs and roof frames are the basic structural components that make the skeleton of the structure, which carries the loads and connects to other members. In a Hazard Resilient House, these components are designed to contribute as much as possible to the integrity of the structure.

According to the NBRO (2015), there is a proper mechanism to construct such hazard resilient houses. Several phases are included in such constructions and these phases could be explained as follows:

Planning Phase

- Selection of Land

Before considering building a house on one's own land or purchasing a plot of land to build one, it is necessary to ascertain the suitability of the location and its environment. It will be required to get as much factual information as possible to make the decision. In this, consultation of the respective Local Authority and other relevant authorities regarding approvals permits etc. may be required.

- Hazard Maps

Impact of disasters arising from natural hazards due to unplanned land use and development activities are increasing in Sri Lanka, compromising a great number of lives and properties each year. With this situation, development of hazard profiles for the country became an urgent requirement to minimise the unfavourable impacts of overall development by ensuring the sustainability of investments. In order to fulfil this growing requirement, the Disaster Management Centre (DMC) and the United Nations Development Programme (UNDP) initiated a hazard profile development process in collaboration with relevant technical agencies such as

the NBRO, Department of Meteorology, Coast Conservation and Coastal Resource Management Department, Irrigation Department as well as the Faculty of Agriculture of University of Peradeniya in 2009.

- Use of Hazard Maps

When building in areas or locations that may be subject to natural hazards or other hazardous conditions, special attention shall be given to land selection.

- Planning Clearance and Other Approvals

If the house construction involves a housing scheme, a schematic development plan (fulfilling the criteria specified under the relevant acts) must be submitted for preliminary planning clearance from the relevant local authority and/or the Urban Development Authority (UDA) before proceeding with a detailed design so as to accommodate the statutory requirement of such authorities. Prior to commencing any construction activity, approval shall be obtained from relevant authorities in accordance with the relevant acts, laws and by-laws.

- Layout and Orientation of a Hazard Resilient House

When planning the layout and orientation of the house it is recommended to,

  - Consider layout plans with simple and symmetrical shapes such as square or rectangular shapes that are easy and less costly to construct. Moreover, they can offer better stability under different loading conditions than irregular shapes
  - Avoid irregular shapes, projections and voids etc., as far as possible
  - Keep the length of the structure not exceeding three times the width of the structure
  - Longer structures can undergo larger deformation than shorter structures
  - Plan the layout of internal spaces so as to fit into a simple structural system

- Provide at least one small room in the interior of the house which can be structurally strengthened to serve as a safe refuge in the event of a hazard
- Should the house be constructed on varying ground elevations, consider utilising construction/expansion joints that would allow for better performance under differential movement of ground
- Decide the Orientation of Houses with rectangular layout that is best suited to the location considering the following conditions, whichever governs safety
    - In general, keep the shorter sides of the house facing the most critical wind direction.
    - On hilly slopes, keep the longer sides of the house parallel to the natural contours of the slope.

Design and Construction Phase

- Building Materials

Residential buildings are composed of structural and non-structural components in which numerous types of material are utilised. Foundations, columns, beams, walls, floor slabs and roof frames are the basic structural components that make the skeleton of the structure that carries the load. Walls, floor slabs and roofs may or may not play an important part depending on how they are structurally designed and connected to other members. Non-structural components include wall and roof claddings, ceilings, flooring, lighting and ventilation openings such as doors and windows.

- Foundation System

A foundation system broadly refers to the arrangement of structural members below the plinth level that transfers loads from the superstructure to the ground. The function of a building foundation is to support the building by safely distributing all the loads acting on the structure including the weight of the building and foundation, live loads and external loads to the ground.

- Superstructure

This manual is a timely initiative and requirement, and it is intended to provide advice, guidance and necessary information on key issues associated with building in disaster-prone areas and for planning, siting, design, and construction of housing with improved resilience to common and recurrent hazardous events (NBRO, 2015).

3.7 Additional Case Studies

Google Drive Link:

https://drive.google.com/drive/u/1/folders/1kybRZaUCkCv_tIFrorSZhb0P6QGav-te

- Development and Displacement: the National Involuntary Resettlement Policy (NIRP) in practice (case study 14)
- Forced to Move: Involuntary Displacement and Resettlement – Policy and Practice (case study 15)
- A Developing Trend: Laws and Policies on Internal Displacement (case study 16)
- Innovating in the Supply of Services to Meet the Needs of Immigrants in Italy, in 'From Immigration to Integration: Local Solutions to a Global Challenge' (case study 17)
- Capability of the State and Local Governments to Accept People Who Are Requesting or Have Received International Protection - Is the State Capable of Meeting the Commitments It Has Imposed on Itself with Legal Instruments? (case study 18)
- Refugees and the UK Labour Market- 2019, Centre on Migration, Policy and Society (case study 19)
- Forced Displacement and Housing, Land, and Property Ownership Challenges in Post-conflict and Reconstruction (case study 20)

This lesson introduced you to the governing aspect of built environment in general and in terms of displacement. The existing standards tend to govern the overall structure of built environment. Keeping these governing structures in mind, you will next be introduced to the cross-cutting issues in relation to built environment specifically in displacement.

Chapter Summary

Intended Learning Outcomes	Summary
• Evaluate the relationship between governance and built environment	• Within the sustainable development discourse, there was a solid policy background in place for built environment • The built environment sector should go beyond quality and cost considerations to social context related issues such as equity and inclusivity
• Recognise various forms of governance in relation to the built environment	• International Policy Frameworks on Built Environment • Built environment and human rights • Built Environment and Green Economy • Built Environment and Accessibility
• Recognise the need of the building code in the context of the built environment	• The main purpose of building codes is to protect health safety and welfare of the public
• Analyse the role of sustainable development in built environment	• Case Study – Resilient Housing in Sri Lanka

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4. Cross-cutting Issues in Built Environment Interventions

Intended Learning Outcomes

This lesson will discuss cross-cutting issues in built environment interventions. At the end of this lesson, you will be able to:

- Define what a cross-cutting issue in built environment interventions is
- Name the types of cross-cutting issues in built environment interventions
- Recognise Disaster Resilience as a cross-cutting issue
- Recognise Green and Sustainable Built Environment as a cross-cutting issue
- Recognise Inclusive Built Environment as a cross-cutting issue
- Evaluate various cross-cutting issues in built environment interventions

4.1 Cross-cutting Issues in Built Environment Interventions

Cross-cutting themes are additional issues or areas that intersect with the main field or can be easily integrated into the field without losing focus of the main goal (Alonzi, 2016). These themes can be an effective tool to explain how targeted impact in one area can have a much wider effect. We can identify several cross-cutting issues in built environment interventions and in this chapter, we will discuss the following:

- Disaster Resilience
- Green and Sustainable Built Environment
- Inclusive Built Environment

4.2 Disaster Resilience

In recognition of the devastating and long-term consequences that can result from a disaster, the term 'resilience' has been widely adopted by researchers and policymakers in an attempt to describe the way in which they would like to reduce the society's susceptibility to the threats posed by natural, human and technical hazards (Haigh & Amaratunga, 2010, p. 11) Unsurprisingly, the definition of resilience varies according to the context in which it is applied. For example, the Collins English Dictionary defines resilience of a person as, "recovering easily and quickly from misfortune or illness", but of an object as, being "capable of regaining its original shape or position after bending or stretching" (Haigh & Amaratunga, 2010, p. 11).

The complex nature of disasters, their origins, causes and consequences, has led to widespread recognition that risk reduction through increased resilience will require a multi-sectoral approach. The Hyogo Framework for Action 2005-2015 makes calls to "promote and improve dialogue and cooperation among scientific communities and practitioners working on disaster risk reduction, and encourage partnerships among stakeholders" (Haigh & Amaratunga, 2010, p. 13).

The importance of the built environment in the context of a disaster is best illustrated by examining its characteristics, of which Bartuska (2007) identifies four that are interrelated:

- It is extensive and provides the context for all human endeavours. More specifically, it is everything humanly created, modified, or constructed, humanly made, arranged, or maintained.
- It is the creation of human minds and the result of human purposes; it is intended to serve human needs, wants and values.
- Much of it is created to help us deal with and to protect us from the overall environment and to mediate or change this environment for our comfort and well-being.

- Every component of the built environment is defined and shaped by context; each and all of the individual elements contribute either positively or negatively to the overall quality of environments (Haigh & Amaratunga, 2010, p. 16 -17)

However, disasters are endogenous to society and disaster risk arises when hazards interact with the environmental, social, physical and economic vulnerabilities and exposure of populations (Aitsi-Selmi & Murray, 2015). Therefore, we will discuss disaster resilience as a cross cutting issue in built environment in more detail later in this chapter.

4.2.1 Multi Hazard Mapping

A multiple hazard map (MHM) helps the planning team analyse all vulnerabilities and risks. By facilitating the interpretation of hazard information, it increases the likelihood that the information will be used in the decision-making process (Pourghasemi, 2020). In either the planning of new development projects or the incorporation of hazard reduction techniques into existing developments, the MHM can play a role of great value. MHMs are an important tool in the integrated development planning process (Pourghasemi, 2020).

Pourghasemi (2020) further explains that the Sendai Framework, with its comprehensive vision, recommends more efforts to decrease disaster risk and increase sustainable development. Especially communities who are increasingly susceptible to natural hazards should adhere to these guidelines and plan accordingly. In this regard, the multi-hazard approach is often used in risk reduction projects and studies addressing risks associated with human activities or climate change on a regional and local scale (Pourghasemi, 2020). It is obvious that introducing a universal set of multi-hazard assessment techniques is of fundamental importance for reducing disaster risks, and constitutes a valuable asset to share with other stakeholders, including the private sector, local government, and other stakeholders (Pourghasemi, 2020).

4. 2. 2 Build Back Better

Building Back Better (BBB) is an approach to post-disaster recovery that reduces vulnerability to future disasters and builds community resilience to address physical, social, environmental, and economic vulnerabilities and shocks. Recovery within a BBB framework gives impacted communities the chance to reduce risks not only from the immediate hazard but from threatening hazards and conditions as well (GFDRR, 2013, p. 2).

BBB is also an integral part of the cross-cutting issues of recovery, including environment, gender, and governance. Some examples of BBB activities in cross-cutting areas are as follows (GFDRR, 2013):

Environment

- Rebuilding/restoring physical and environmental infrastructure to reduce vulnerability, protecting the environment, and restoring natural ecosystems. For example, using mangroves as natural protection against sea intrusion.
- Integrating sustainable environmental practices and natural resource management within recovery activities. For instance, promoting forestry and/or agro-forestry initiatives like fruit or commercial tree farming as alternative sources of income.

Gender

- Providing gender-specific support for reconstruction and recovery, so that the differing needs of women and men are met through recovery.
- Using recovery as an opportunity to bridge the gender resilience gap. Women may be more vulnerable to the impact of disasters; gender-specific support has the capacity to improve future resilience.
- Rebuilding in a way that is inclusive of women, girls, boys, and men from the affected population.

Governance

- Introducing business continuity for government systems and public services.
- Preparing contingency response mechanisms.
- Mainstreaming disaster risk management across all sectors (GFDRR, 2013, p. 2-3)

4.2.3 Disaster Resilience as a Cross-cutting Issue in Built Environment Intervention

According to Malalgoda, Amaratunga, and Haigh (2014), empirical evidence reveals a number of barriers in creating a disaster resilient built environment within urban cities in Sri Lanka. However, the mentioned challenges can be identified as cross-cutting issues in built environment intervention without being limited to the Sri Lankan context. The main challenges identified by Malalgoda, Amaratunga, and Haigh (2014) are as follows:

- **Lack of regulatory frameworks**

Empirical evidence reveals that the existing regulatory frameworks on planning, design and construction do not adequately look into disaster impacts and resilience (Malalgoda, Amaratunga, & Haigh, 2014, p. 739).

- **Unplanned cities and Urbanisation**

Due to urbanisation, most of the drainage systems and protective and servicing infrastructure are not sufficient and many dwelling houses and other buildings are built without adequate consideration of disaster risks and vulnerabilities. Therefore, most of the cities in Global South are unplanned.

- **Old building stocks and at-risk infrastructure**

A number of old building stocks and infrastructure are visible in many cities which were designed without adequate consideration to disaster impacts and resilience (Malalgoda, Amaratunga, & Haigh, 2014). However, it is often difficult for developing countries to allocate funding to replace these old building stocks and risk infrastructure.

- **Unauthorised structures**

Many unauthorised structures and temporary buildings are visible in coastal areas and in cities which are poorly built without basic infrastructure and other facilities (Malalgoda, Amaratunga, & Haigh, 2014, p. 740).

- **Institutional arrangements**

If we take an example from Global South, as mentioned earlier, in Sri Lanka there are a number of governmental organisations which are responsible for the design, development, operation and maintenance of built environment. With these organisations, we can identify there is a system in place to create a disaster resilient, built environment in Sri Lanka. However, this current system demonstrates a number of drawbacks such as lack of well-defined roles and responsibilities, overlapping of responsibilities, lack of coordination among organisations, and lack of leadership, team work, political will and commitment (Malalgoda, Amaratunga, & Haigh, 2014).

- **Inadequate capacities of municipal councils**

Countries from the Global South such as Sri Lanka are facing a number of challenges in their contribution to making a resilient built environment within cities. The main issues that have emerged are legal framework, lack of adequate tools, techniques and guidelines, human resources and funding constraints, lack of focus, coordination, managing the long-term process, dependence on central government, irregular occurrences of disasters, community engagement, leadership and organisational culture, and corruption and political interference (Malalgoda, Amaratunga, & Haigh, 2014).

- **Lack of funding**

Lack of funding or funding restrictions act as a major barrier to developing disaster resilient built environment in cities. On the other hand, municipal councils do not have a separate budget allocation for Disaster Risk Reduction (DRR) activities and therefore finding funds for these projects is rather difficult (Malalgoda, Amaratunga, & Haigh, 2014).

- **Inadequacy of qualified human resources**

Inadequacy of qualified human resources is another problem. Without an adequate number of qualified staff that are knowledgeable about disaster management and built environment, it is difficult to build a resilient built environment and to effectively monitor the development activities carried out in the city.

- **Corruption and unlawful activities**

Corruption and unlawful activities are quite common in the construction sector and as a result, planning regulations and approval systems are sometimes overruled due to various reasons such as political pressure and bribery (Malalgoda, Amaratunga, & Haigh, 2014, p. 741).

4.2.4 Case Studies

Google Drive Link:

https://drive.google.com/drive/u/1/folders/1IuKv1VeQB2RjH38uCNAnVjqW2XM5FjRu

- Challenges in Creating a Disaster Resilient Built Environment (case study 21)
- Climate and Disaster Resilience Initiative: Case Studies on Chennai, Colombo and Dhaka (case study 22)

- Community Empowerment and Disaster Risk Reduction in Chittagong City (case study 23)
- Enhancing Disaster Resiliency through Local Environment Management: Case of Mumbai, India (case study 24)

4.3 Green and Sustainable Built Environment (including nature-based solutions)

A green or sustainable building is a building that, because of its construction and features, can maintain or improve the quality of life of the environment in which it is located. To do this, it is essential to achieve a high level of efficiency: reducing the consumption of energy, water and other resources minimises pollution (Srinivas, 2015). As we have already discussed about this in Chapter 3, we will now explain how this nature-based solution and sustainable building relate to built environment as cross-cutting issues.

4.3.1 Nature-based Solutions

Nature has provided mankind with food, fuel, and shelter throughout evolutionary history. However, in contemporary cities, many natural landscapes have become degraded and replaced by impermeable hard surfaces (Xing, Jones, & Donnison, 2017). The reversal of this trend is dynamic, complex and still in its infancy. There are many facets of urban greening initiatives involving multiple benefits, sensitivities and limitations. Based on a review of the literature across disciplines, key characteristics could be organised into four groups: policy and community initiatives, multiple benefits assessment, topology, and design options (Xing, Jones, & Donnison, 2017, p. 2).

4.3.1.1 Characterisation of Nature-Based Solutions for the Built Environment

According to Xing, Jones, & Donnison (2017), characterisation of Nature-Based Solutions for built environment is as follows:

(I) An integrated community participation and policy framework

This aims to promote a virtuous circle from the integration of joint initiatives, identification of potential actions, delivery of an integrated design, realisation of multiple benefits, and eventually an improved urban greening action informing future initiatives, and promoting an iterative learning loop to ensure lessons are learnt and accumulated results are assimilated for greater impact (Xing, Jones, & Donnison, 2017).

Figure 4.1: A generic characterisation framework for exploring nature based built environment solutions (Xing, Jones, & Donnison, 2017, p. 3)

(II) Key features of the multiple benefits of urban greening actions

According to Xing, Jones, & Donnison (2017), urban green infrastructure can offer multiple benefits simultaneously. Although the existing evidence is fragmented, studies reveal the benefits of dynamic ecosystem services. To optimise and realise the potential of urban greening actions, it is important to consider sustainability features over the whole life cycle of the project. To date,

the evidence base for the multiple benefits of urban green infrastructure has been complicated and limited (Xing, Jones, & Donnison, 2017).

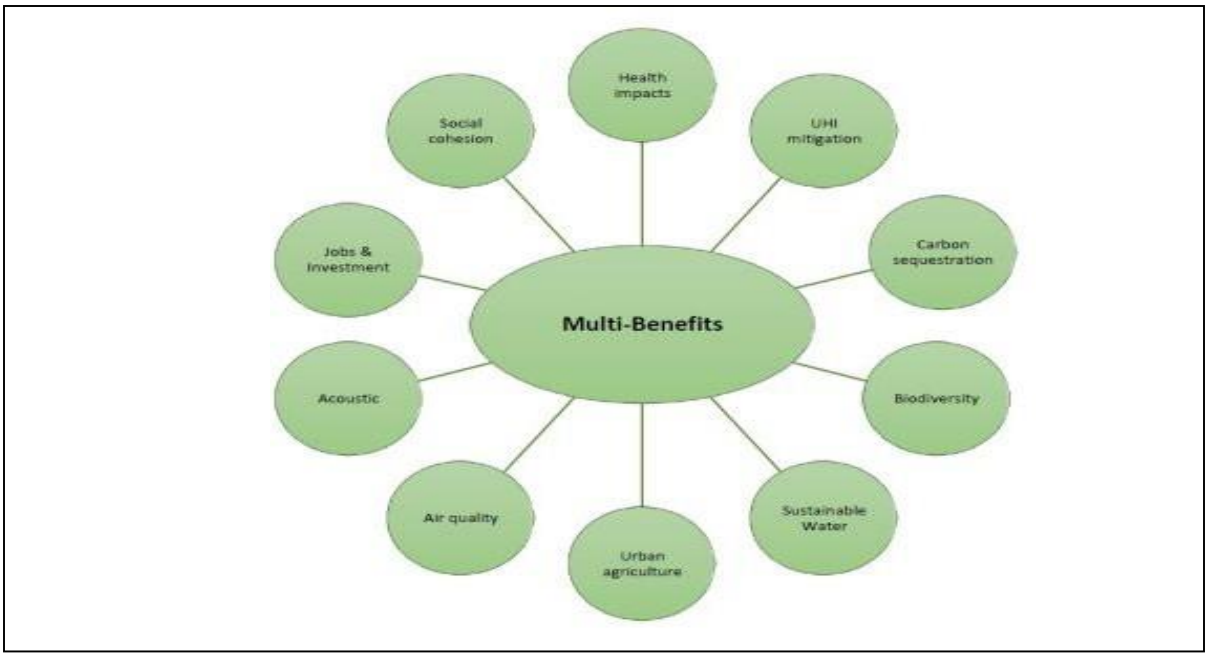

Figure 4.2: Potential multiple benefits of nature-based urban solutions (Xing, Jones, & Donnison, 2017, p. 4)

(III) A simplified built environment greening topology

Xing, Jones, & Donnison (2017) state that providing access to nature for growing urban populations poses unprecedented challenges in terms of urban development. With less land available to build on, one promising solution is to construct greeneries in, on or around buildings. Based on the location of the urban greenery, Xing, Jones, & Donnison (2017) have identified four meta-types of nature based urban actions: indoor plants, green roofs, green facades and green and blue landscaping comprising trees, gardens, parks and water features (Xing, Jones, & Donnison, 2017).

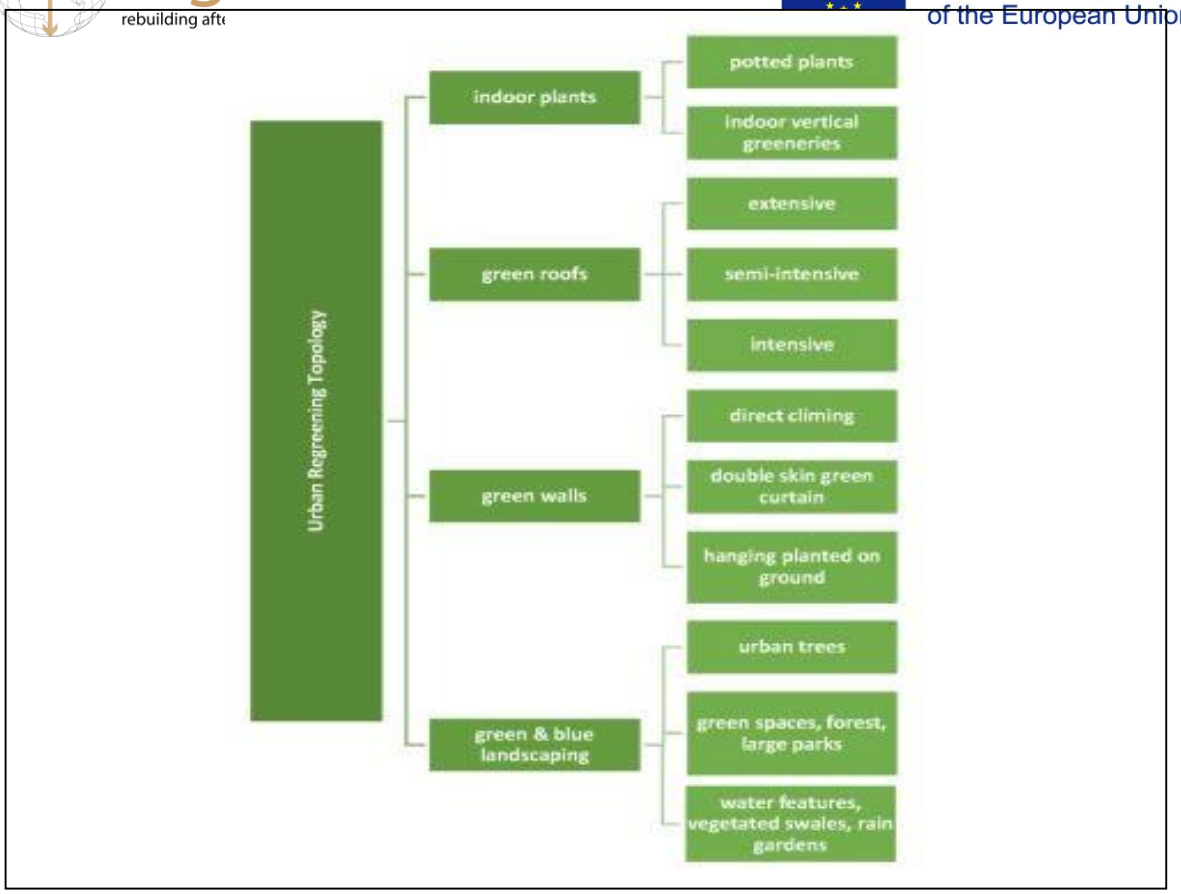

Figure 4.3: Development of a Simplified Topology for Nature Based Solutions in the Built Environment (Xing, Jones, & Donnison, 2017, p. 4)

(IV) Built environment greening design decisions

According to Xing, Jones, & Donnison (2017), making urban greening design decisions is a complicated undertaking. It has been argued that knowledge about the ecosystem should be clearly communicated and made easily accessible to policymakers, the general public and other stakeholders (Xing, Jones, & Donnison, 2017). Design options are key in determining policy frameworks, assessing multiple benefits and engaging with community members. The key green design decisions are mentioned and illustrated (Xing, Jones, & Donnison, 2017) below:

- Selection of plants
- Growing medium and structural supporting infrastructure
- Irrigation and water management
- Maintenance

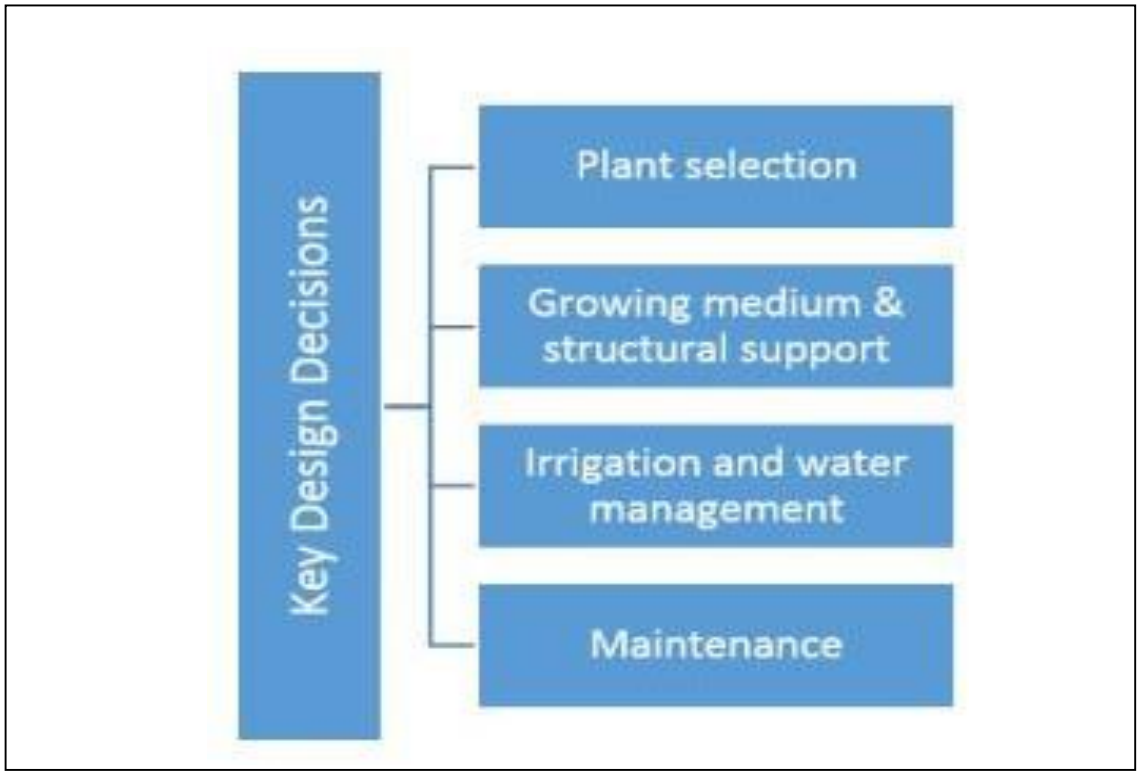

Figure 4.3: Built Environment Greening Design Decisions (Xing, Jones, & Donnison, 2017, p. 5)

Xing, Jones, & Donnison (2017), further describe that learning from, and establishing a new relationship with nature is needed to mainstream nature-based solutions in the built environment. Therefore, the characterisation which is described above provides opportunities to develop future empirical studies to generate reference data for design optimisation based on learning between the disciplines of plant science, ecology, urban climate, building physics, engineering, biology, urban planning, and architecture (Xing, Jones, & Donnison, 2017).

4.3.2 Models of Sustainable Built Environment

Sustainable construction is an overall term used to describe a building that is environmentally adapted in all respects (Mikaelsson & Jonasson, 2021). Mikaelsson and Jonasson (2021) further describe that when it comes to ecological as well as social sustainability, experience shows that it is often difficult to implement the initial ambitions in construction projects. This is not only due to a lack of competence but also because sustainability criteria can be difficult to be reconciled with short-term financial interests (Mikaelsson & Jonasson, 2021). However, under this, five main models of Sustainable Built Environment can be identified as follows:

4.3.2.1 Bioclimatic Design

Bioclimatic design—combining 'biology' and 'climate'—is an approach to the design of buildings and landscape that is based on local climate (Watson, 2013, p. 1). When using the term "bioclimatic," architectural design is linked to the physiological and psychological need for health and comfort (Watson, 2013). In adopting bioclimatic approaches, the designer endeavours to create comfort conditions in buildings by understanding the microclimate and resulting design strategies that include natural ventilation, day lighting, passive heating and cooling. The premise of bioclimatic design is that buildings utilise natural heating, cooling, and day lighting in accordance with local climatic conditions (Watson, 2013).

4.3.2.2 Biophilic Design

Biophilic Design is the practice of connecting people and nature within the built environments and communities (Hartley, Bernett, Smith, Olivieri, & Serafini, 2016, p. 2). Biophilic design can reduce stress, enhance creativity and clarity of thought, improve our well-being and expedite healing. As the world population continues to urbanise, these qualities are ever more important (Hartley, Bernett, Smith, Olivieri, & Serafini, 2016).

4.3.2.3 Sustainable and Healthy Built Environment

According to Loftness and Snyder (2013), while sustainable design is focused on reducing the environmental footprint, the resources consumed and the waste produced, it is also critically linked to health. Design decision-making for sustainability—land use, building massing and enclosure, lighting systems, mechanical systems, interior systems, building operation and management—can not only reduce our environmental footprint, it can and must enhance visual, aural, dermal, musculoskeletal, circulatory, respiratory, reproductive, and mental health (Loftness & Snyder, 2013).

4.3.2.4 Regenerative Development and Design

The emerging field of regenerative development and design marks a significant evolution in the concept and application of sustainability (Mang & Reed, 2012). Practices in sustainable or green design have focused primarily on minimising damage to the environment and human health, and using resources more efficiently, and in effect, slowing down the degradation of earth's natural systems. Advocates of a regenerative approach to built environment believe that a much more deeply integrated, whole-systems approach to the design and construction of buildings and human settlements (and nearly all other human activities) is needed (Mang & Reed, 2012).

4.3.2.5 Resilient Design

Resilient design is the process of designing buildings, landscapes and entire communities to mitigate the impact of disasters and other hazards (Tobias, 2020). Resilient design focuses on practical and realistic solutions. The following principles of a resilient design can be identified:

- Resilience applies at all project scales
- Basic human needs are fulfilled in resilient systems
- Simple systems are more resilient
- Durability

- Local resources improve resilience
- Resilience anticipates interruptions
- Social aspects of resilience can be as important as physical responses

4.3.3 Case Studies

Google Drive Link:

https://drive.google.com/drive/u/1/folders/1IuKv1VeQB2RjH38uCNAnVjqW2XM5FjRu

- Characterisation of Nature-based Solutions for the Built Environment (case study 25)
- Sustainable Built Environments (case study 26)
- An Integrative Review of the Built Environment Discipline's Role in the Development of Society's Resilience to Disasters (case study 27)
- The Built Environment Professions in Disaster Risk Reduction and Response (case study 28)

4.4 Inclusive Built Environment (including supporting vulnerable and special needs groups)

An inclusive environment recognises and accommodates differences in the way people use the built environment. It facilitates dignified, equal and intuitive use by everyone. It does not physically or socially separate, discriminate or isolate (CIC, 2021). It readily accommodates and welcomes diverse user needs from childhood to adulthood through to old age, across all abilities and disabilities and embraces every background, gender, sexual orientation, ethnicity and culture.

An inclusive environment (CIC, 2021),

- Creates buildings, places and spaces that can be used easily, safely and with dignity, by all of us, regardless of age, disability or gender.
- Provides choice, is convenient and avoids unnecessary effort, separation or segregation.
- Goes beyond meeting minimum standards or legislative requirements.
- Recognises that we all benefit from improved accessibility, including disabled people, older people and families with children, carers and those of us who do not consider ourselves to be disabled (CIC, 2021).

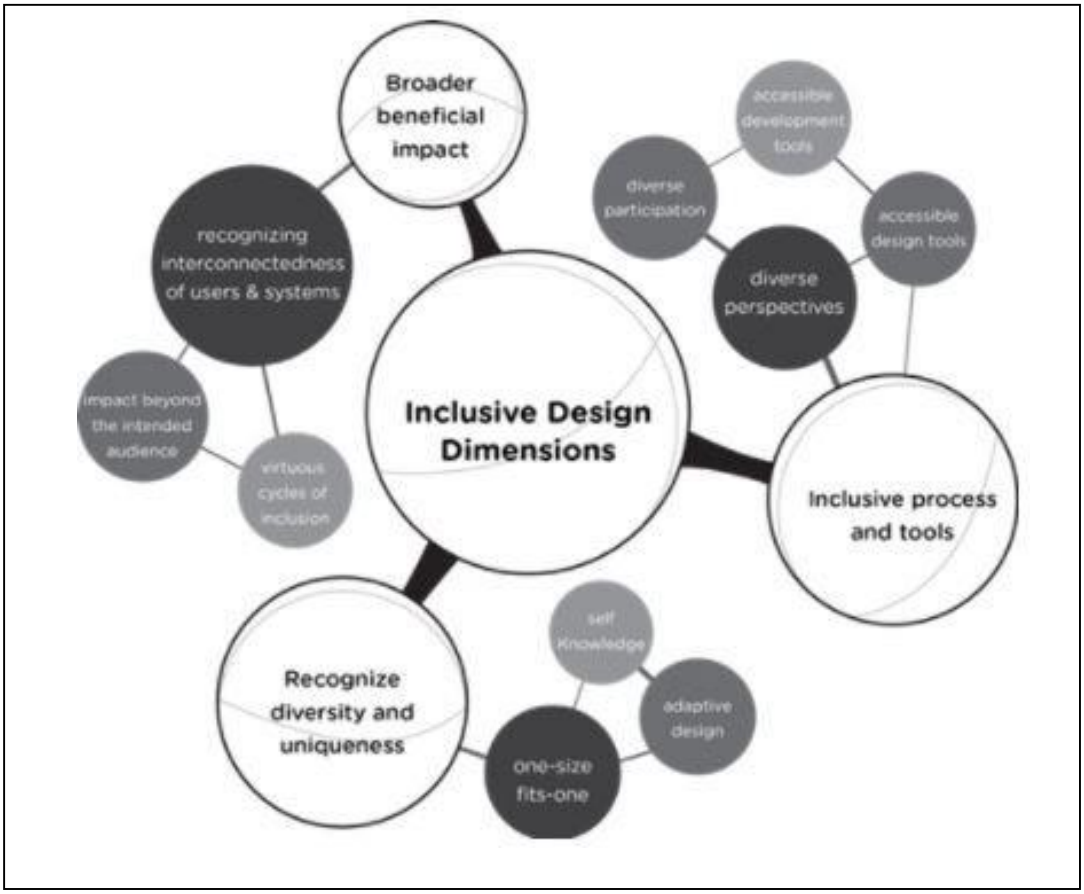

Figure 4.4: Inclusive Built Environment (CIC, 2021, p. 2)

Therefore, Inclusive Built Environment design aims at taking into account people's diversity as much as possible; it is a design approach of current interest that concerns all of us. It has the potential to contribute to sustainability, and it affects different scales of the built environment. Its uptake may be fostered by involving user/experts and integration in education (CIC, 2021).

4.4.1 Accessibility in the Built Environment (Inclusive Built Environment)

Developers, designers and owners of buildings have a responsibility to ensure that the built environment is accessible to everyone wherever it is practical to do so (CIC, 2021). This includes anyone who has mobility or other impairment, whether permanent or temporary, such as (CIC, 2021),

- Wheelchair users, their careers, people with walking difficulties and so on
- People with pushchairs and children
- People with sight or hearing impairments
- Elderly people
- People with co-ordination or respiratory problems

Therefore, according to Heylighen, Linden and Steenwinke (2017), Inclusive Built Environment creates buildings, places and spaces that can be used easily, safely and with dignity, by all of us, regardless of age, disability or gender. It provides choice, is convenient and avoids unnecessary effort, separation or segregation. It also goes beyond meeting minimum standards or legislative requirements. Moreover, it recognises that we all benefit from improved accessibility, including disabled people, older people and families with children, carers and those of us who do not consider ourselves to be disabled (Heylighen, Linden, & Steenwinke, 2017).

We will discuss inclusive housing further in Chapter 6 under the importance of housing and have already discussed this in Chapter 3 on governance. However, as a cross-cutting issue for built environment, there are three principles underpinning thinking inclusively about built environment design as follows:

- Understanding differences and diversity
- Promoting independence
- Ensuring integration (CEM, 2010)

4.4.2 Case Studies

Google Drive Link:

https://drive.google.com/drive/u/1/folders/1IuKv1VeQB2RjH38uCNAnVjqW2XM5FjRu

- Ten Questions Concerning Inclusive Design of the Built Environment (case study 29)
- Essential Principles, Creating an Accessible and Inclusive Environment (case study 30)
- Protecting Internally Displaced Persons: A Manual for Law and Policymakers (case study 31)
- An Integrative Review of the Built Environment Discipline's Role in the Development of Society's Resilience to Disasters (case study 32)

This lesson leaves a point to ponder about cross-cutting issues are interrelated with other aspects of built environment interventions such as governance and housing. Next, we will move on to managing a built environment intervention.

Chapter Summary

Intended Learning Outcomes	Summary
• Define what a cross-cutting issue in built environment interventions is	• Cross-cutting themes are additional issues or areas that intersect with the main field or can be easily integrated into the field without losing focus of the main goal

• Name the types of cross-cutting issues in built environment interventions	• Disaster Resilience • Green and Sustainable Built Environment • Inclusive Built Environment
• Recognise Disaster Resilience as a cross-cutting issue	• Lack of regulatory frameworks • Unplanned cities and urbanisation • Old building stocks and at risk infrastructure • Unauthorised structures • Institutional arrangements • Inadequate capacities of municipal councils • Lack of funding • Inadequacy of qualified human resources • Corruption and unlawful activities
• Recognise Green and Sustainable Built Environment as a cross cutting issue	• Nature-based solution • Models of sustainable built environment
• Recognise Inclusive Built Environment as a cross-cutting issue	• An inclusive environment recognises and accommodates differences in the way people use the built environment. It facilitates dignified, equal and intuitive use by everyone.

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5. Managing Built Environment Intervention

Introduction and Intended Learning Outcomes

We will now move on the practical aspect of operationalisation of a built environment intervention. At the end of this lesson, you will be able to:

- Define what managing built environment intervention is
- Recognise the stakeholders of built environment interventions
- Recognise the economics and financing of interventions
- Recognise ethics and professionalism of built environment

5.1 Managing Built Environment Interventions

In this chapter we will discuss built environment interventions and the key features that should be considered when managing built environment namely,

- Stakeholders of built environment interventions
- Economics and financing of interventions
- Ethics and professionalism

5.2 Stakeholders of Built Environment

It is important to consider the stakeholders of Built Environment interventions and stakeholders' collective thinking on the contextual factors that influence the success and failures of built environment interventions (L.Firth, Stephens, Cantinotti, Fuller, Kestens, & Winters, 2021). Many researchers have identified various stakeholders within the perspective of post-natural disaster reconstruction (Shafique & Warren, 2016).

Stakeholder	Description	Identified by
Affected community / residents	Local inhabitants affected by the disaster	(Chang, Wilkinson, Potangaroa, & Seville, 2010; Dixon & McGregor, 2011; Dorosh, Malik, & Krausova, 2010; Kaiser et al., 2013; Mannakkara & Wilkinson, 2013; Vojinovic & van Teeffelen, 2007; Wilson, 2009; Yan et al., 2012)
Government	Public and semi-public entities and line agencies at village, district, state and national levels including planning and policy making bodies & forums	(Chandrasekhar, 2012; Chang et al., 2011; Dorosh et al., 2010; Hayles, 2010; Khan & Rahman, 2007; Mannakkara & Wilkinson, 2013; Ophiyandri et al., 2013; Samaratunge, Coghill, & Herath, 2012; Vojinovic & van Teeffelen, 2007) (Ophiyandri et al., 2013; Tyler & Singh, 2011; Wilson, 2009) (Brun & Lund, 2010; Tyler & Singh, 2011)
Non-government organizations (NGOs)	International & National NGOs, voluntary associations, civic groups	(Brun & Lund, 2010; Chandrasekhar, 2012; Y. Chang et al., 2010; Hayles, 2010; Jigyasu, 2013; Khan & Rahman, 2007; Ophiyandri et al., 2013; Samaratunge et al., 2012)
Community based organizations (CBOs)	Community based organization at village and district levels	(Brun & Lund, 2010; Chandrasekhar, 2012; Khan & Rahman, 2007; Tyler & Singh, 2011)
Media	International and national print and electronic media	(Amaratunga & Haigh, 2011a; Khan & Rahman, 2007)
Professionals	Consulting and construction firms & suppliers	(Ophiyandri et al., 2013; Vojinovic & van Teeffelen, 2007)
Academia	Researchers	(Khan & Rahman, 2007; Ophiyandri et al., 2013)
Private and corporate sector	International & National business and industrial groups	(Chang, Wilkinson, Potangaroa, & Seville, 2012; Khan & Rahman, 2007; Mannakkara & Wilkinson, 2013; Samaratunge et al., 2012; Yan et al., 2012)
Donors	International & National funding agencies	(Jigyasu, 2013; Khan & Rahman, 2007; Mannakkara & Wilkinson, 2013; Wilson, 2009; Yan et al., 2012)
Beneficiaries & End users	Direct or indirect beneficiaries & users of the facilities	(Hayles, 2010; Tyler & Singh, 2011)
Religious fundamentalists	Religious based groups and parties	(Brewer, McVeigh, & Meding, 2013)

Figure 5.1: Various stakeholders (Shafique & Warren, 2016, p. 7)

According to Amaratunga and Haigh (2011), the nature, objectives and context of any specific project determine its stakeholders (Shafique & Warren, 2016). These stakeholders have their specific roles and interests in the project and based upon their interests and roles, researchers have divided stakeholders into various groups (Shafique & Warren, 2016).

5.2.1 Types of Stakeholders

Literature reveals that there are several types of stakeholders and Chandrasekhar (2012) has divided stakeholders into the following:

- Government agencies (including state, district and village level administration)
- Non-governmental Organisations (NGOs) (international, national and regional)
- Community-based Organisations (CBOs) (including market groups) and effected community (Chandrasekhar, 2012)

According to Shafique and Warren (2016), Chang (2011) divided stakeholders into 'principal' and 'primary' stakeholders, while Amaratunga and Haigh (2011) classified typical stakeholder groups encountered on a post-disaster reconstruction project as 'primary stakeholders' and 'secondary stakeholders' (Shafique & Warren, 2016).

- Primary stakeholders - Essential for the project. The project could not proceed without their participation. E.g. donor agencies, governments, and regulatory bodies
- Secondary stakeholders - Not essential but they have influence or are influenced by the project. E.g. local community, media and academia (Shafique & Warren, 2016)

Brun and Lund (2010) also considered the affected community as 'primary or principal stakeholders' and all others including NGOs, government officials, and other partners as 'other stakeholders' (Brun & Lund, 2010). Davis (2014) has classified stakeholders as follows:

- Senior management: Board, directors, portfolio director, executive management, investors, executives, project executives, senior management, programme director, owner
- Project core team: Project leader, manager, personnel, project team and its leader, other organisational involvements
- Project recipients: Consumers, customers, clients, end users, users

5.2.2 Stakeholders of Built Environment Intervention

According to Davis (2014), the 21st century is more focused on stakeholders (Davis, 2014) and stakeholder participation is very well seen. Stakeholders should be engaged in reconstruction in a variety of ways ranging from planning and designing to its implementation and completion (Shafique & Warren, 2016). Furthermore, stakeholder engagement has been included in the mission statements and organisational philosophies of a large number of non-governmental organisations and international aid organisations (Daly & Brassard, 2011).

5221 Stakeholders' Approaches towards Natural Disasters

Mojtahedi and Oo (2006) discuss about stakeholders' approaches to natural disasters as follows:

- Built environment stakeholders need to become more immersed in group decision-making
- Professional training for stakeholders such as architects, planners, engineers, developers, etc. pertinent to risk and hazard awareness should be systematically organised
- Performance-based contracting and product or service oriented procurement decisions should be taken in order to make designers and contractors think about long-term implications and performance of buildings and structures they design and construct (Mojtahedi & Oo, 2012, p. 135)

5222 Challenges for Stakeholders of Built Environment Interventions

According to Shafique and Warren (2016) in their study titled "Stakeholders and Their Significance in Post Natural Disaster Reconstruction Projects: A Systematic Review of the Literature," the challenges for stakeholders of built environment interventions are as follows:

- Relationships among various stakeholders determine effective governance which is an important aspect to satisfy their potentially conflicting interests.
- The need to eliminate any clash of interests and improved coherence between stakeholders for better results
- Stakeholders should improve coherence and the level of engagement to achieve perceived objectives
- Communication with stakeholders and analysing their needs as the most significant factor for stakeholder management (Shafique & Warren, 2016)

Moreover, a low level of awareness among key stakeholders can be identified while some stakeholders do not incorporate sustainability aspects in their building design and other stakeholders do not have active roles in decision-making involving building construction project (Mojtahedi & Oo, 2012). However, there could be several ways that stakeholders could participate such as through information provision, participation by consultation, participation through provision of resources such as material, funds, labour or any other resource, passive or interactive participation and by taking other initiatives (Daly & Brassard, 2011). Therefore, researchers have determined that stakeholder engagement is very important for the success of a project. However, a practical approach based on scientific research for the engagement of stakeholders in a project still needs to be formulated (Shafique & Warren, 2016).

5.2.3 Case Studies

Google Drive Link:

https://drive.google.com/drive/u/1/folders/1O-jBOcrS4fOZTC7URm4HkFiY_Frbribj

- Stakeholders' Approaches towards Natural Disasters in Built Environment: A Theoretical Framework (case study 33)
- Sustainability Potential Awareness among Built Environment Stakeholders: Experience from Tanzania (case study 34)
- Post-disaster Reconstruction of the Built Environment: Rebuilding for Resilience (case study 35)

5.3 Economics and Financing of Interventions

Economic analysis involves comparing the costs and consequences of different interventions and enabling conclusions to be drawn about their relative efficiency (Hutton & Rehfuess, 2018). Several types of economic analysis are possible, covering cost description and cost analysis, outcome description and outcome analysis, and economic evaluation (Hutton & Rehfuess, 2018). There are two principal types of economic evaluation: cost benefit analysis and cost effectiveness analysis. However, financial analysis is generally the assessment of income, expenditure, cash flows, profit and end of period balance (balance sheet) (Hutton & Rehfuess, 2018). Financial analysis of an intervention therefore estimates the financial impact of the intervention on the implementing agency or those financially affected. Economic analysis, on the other hand, ultimately measures the impact of an intervention on the country's economy, and considers overall resource uses and consequences, based on the premise that resources are scarce (Hutton & Rehfuess, 2018). Under this section we will discuss about economics and financing of interventions along the following themes:

- Whole life costing
- Cost benefit analysis

5.3.1 Whole Life Costing

Whole life costing is defined as, ‘a technique for examining and determining all the costs—in monetary terms—direct and indirect, of designing, building and facility management (operating, maintenance, support and replacement) of a building throughout its entire service life including the disposal cost” (Trusson, 2019). Total Asset Management, an Australian government document, use the term life cycle costing (LCC) and defines LCC of an asset as, “the total cost throughout its life including planning, design, acquisition and support costs and any other costs directly attributable to owning or using the asset” (Trusson, 2019).

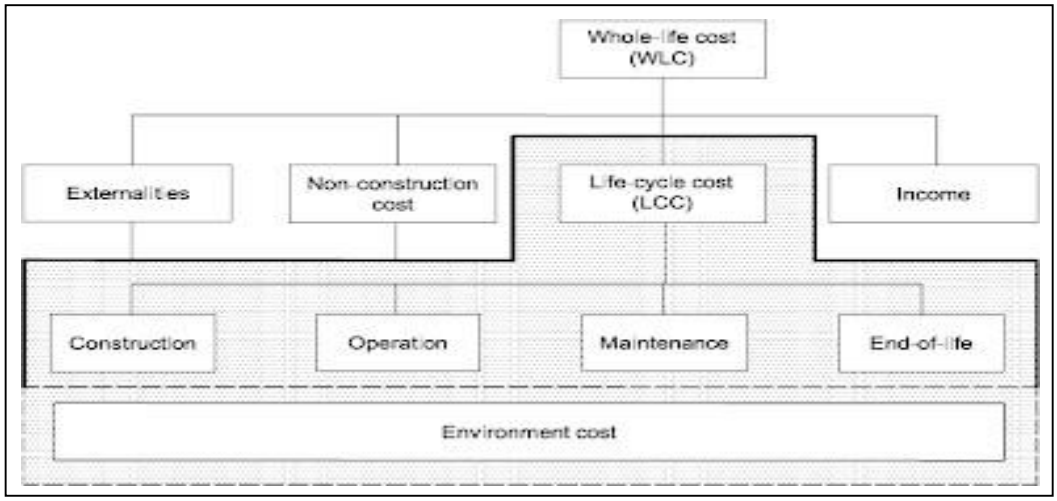

Figure 5.2: Whole Life Costing (Trusson, 2019, p. 3)

5.3.1.1 Whole Life Costing towards a Sustainable Built Environment

According to Wong (2010), in the built environment, decisions that are made at the feasibility, design, pre-construction, construction and post construction stages can have long-term economic and environmental effects. Correct decisions that are made over the types of building material and services to be used can help clients achieve long term savings and provide a better quality of life. In the built environment, whole life costing can be used to support the decision-making process (Wong, 2010).

5.3.2 Cost Benefit Analysis

A cost benefit analysis (CBA) is the process used to measure the benefits of a decision or action minus the costs associated with taking that action (Hayes, 2021). A CBA involves measurable financial metrics such as revenue earned or costs saved as a result of the decision to pursue a project. Hayes (2021) further explains that a cost benefit analysis should begin with compiling a comprehensive list of all the costs and benefits associated with the project or decision (Hayes, 2021). According to Shabrin and Kashem (2017), CBA is one of the best measurement scales to identify the total benefits with the cost of a single programme or a policy to society. Further, CBA is the best way to identify the economic benefit of making any given investments, and to select and rank the project from numerous investment options (Shabrin & Kashem, 2017). The analysis done is not to solve all such conflicts, or eliminate the uncertainty and hence the demand for sound judgment, but to provide a deep body of data gathered in a disciplined manner that can help decision-makers confronted with difficult investment or insurance determinations (Shabrin & Kashem, 2017).

In addition, Hutton and Rehfuess (2018) illustrated a step-by-step approach to CBA, from formulating a policy question to making a policy decision as follows:

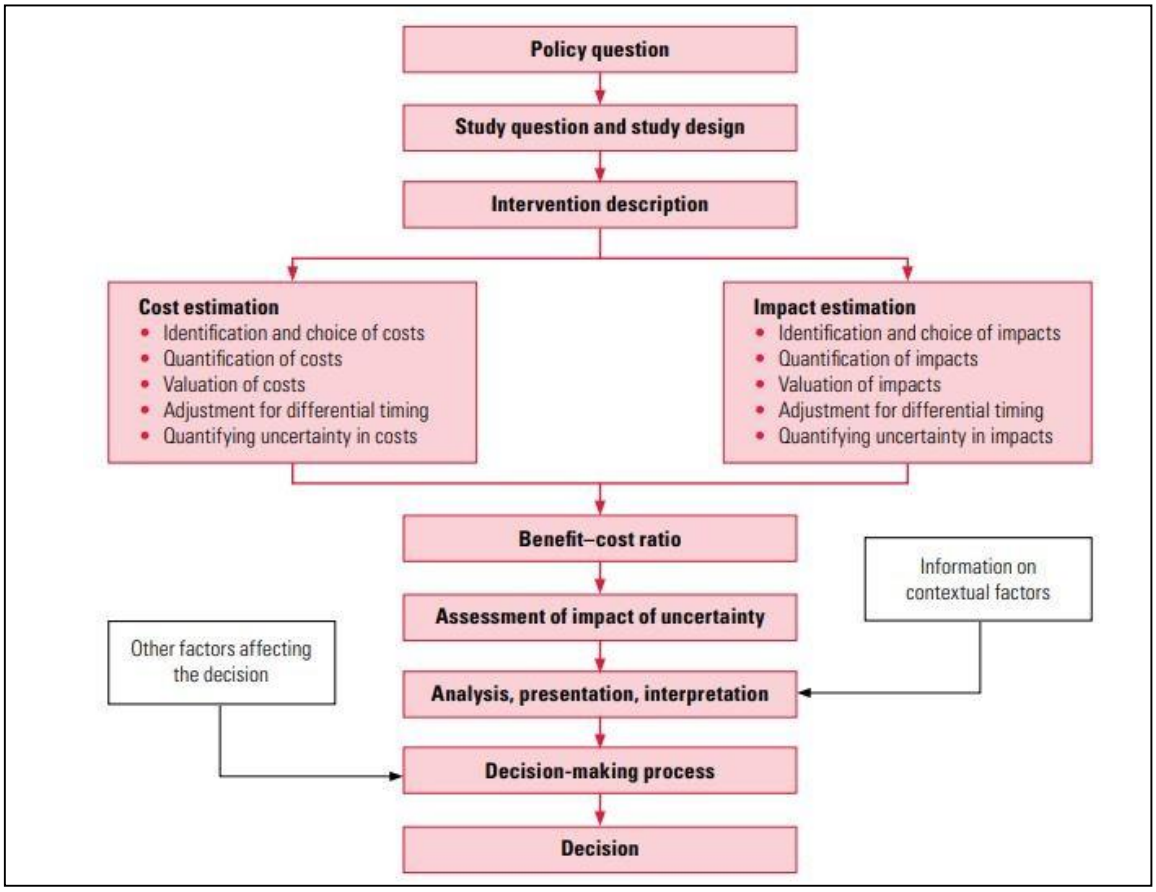

Figure 5.3: Step-by-step approach to cost–benefit analysis (Hutton & Rehfuess, 2018, p. 6)

5.3.3 Case Studies

Google Drive Link:

https://drive.google.com/drive/u/1/folders/1O-jBOcrS4fOZTC7URm4HkFiY_Frbribj

- Whole Life Costing of Sustainable Design (case study 36)
- Successes and Failures of Built Environment Interventions: Using Concept Mapping to Assess Stakeholder Perspectives in Four CanadianCities (case study 37)

5.4 Ethics and Professionalism

Ethics is said to be the code of conduct which members of an agreed, shared interest agree to abide by in the conduct of their activities towards other people (Sharon, 2019). “Behaving ethically is at the heart of what it means to be a professional; it distinguishes professionals from others in the market place” (RICS, 2018). Professional ethics is an act of “giving one’s best to ensure that client’s interests are properly cared for, but in doing so, the wider public interest is also recognised and respected” (Mooring, 2018). It is the character by which a set of professionals are identified with; this also ensures some degree of commitment to excellence (Sharon, 2019).

According to Sharon (2019), the practice of construction activities in any economy is governed and regulated by a professional body and among the responsibilities of these body is the formulation of a set of ethics or codes of conduct which members of the said profession agree to be bound by. Sharon (2019) further explains that it is worth noting that all professionals in built environment have similar codes of conduct or ethics which can be translated to mean that the interest of the client is of priority to all these professionals and their image before their client is equally important. Professionals play an important role in the development of any economy through design, construction and development of infrastructures and industrial systems (Sharon, 2019). Professionals in built environment include but are not limited to architects, quantity surveyors, land surveyors and engineers. All professional bodies in built environment have agreed to conduct themselves in a manner which suggests the following (Sharon, 2019):

- Honesty
- Efficiency
- Loyalty
- Integrity
- Competence

- Confidentiality
- Ensure safety, health and welfare of the public
- Conduct themselves in such a way as to always enhance the reputation of the profession
- Treat others with respect
- Take responsibility
- Only issue public statements in an objective and truthful manner (Sharon, 2019).

However, Sharon (2019) highlights that all professionals should ensure that they give their best by maintaining a good working relationship with the client and ensure that the profession is held in the best light possible by the client.

Having explained the professional aspect of a built environment interventions, next, we move on to housing.

5.4.1 Case Studies

Google Drive Link:

https://drive.google.com/drive/u/1/folders/1O-jBOcrS4fOZTC7URm4HkFiY_Frbribj

- Professional Ethics in the Built Environment and its Impact on Client Behaviour (case study 38)

Chapter Summary

Intended Learning Outcomes	Summary
• Recognise the stakeholders of built environment interventions	• The stakeholders of built environment interventions and stakeholders' collective thinking on the contextual factors that influence the success and failures of built environment interventions
• Recognise the economics and financing of interventions	• Whole Life Costing • Cost Benefit Analysis
• Recognise ethics and professionalism of built environment	• All professionals in built environment have similar codes of conduct or ethics which can be translated to mean that the interest of the client is a priority to all these professionals and their image before their client is equally important.

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6. Housing

Introduction and Intended Learning Outcomes

This lesson will introduce the most vital built environment aspect which is housing. At the end of this lesson, you will be able to:

- Recognise different types of housing in terms of built environment in mass displacement
- Analyse the role of social factors in housing
- Define the concept of inclusive housing

6.1 Types and Stages of Housing (emergency, temporary, transitional, permanent, resettlement, relocation, social housing, etc.)

6.1.1 Importance of Housing Needs in Built Environment in Relation to Mass Displacement

People get displaced from their homes due to catastrophic reasons. As mentioned in earlier chapters, a fourth typology of displacement has risen to prominence—Climate Induced Displacement (UNISDR, 2009)—adding to the previous three typologies; Development Induced Displacement, Conflict Induced Displacement and Natural Disaster Induced Displacement (Fernando, et al., 2009; Terminski, 2013). In each of these typologies, conditions that pose risks to life, livelihood and property induce humans to leave homes to safer locations. Risks imposed upon the built environment, such as houses, roads, energy and water supply, irrigation and telecommunication networks, and public facilities like schools, become a main reason for the abandonment of human habitats.

Relocation and resettlement projects are utilised to bring redress to victims of displacement. The satisfaction of a relocation process is based on the fulfilment of the needs of the displaced, which include physical, social, economic and psychological needs (Fernando et al, 2020, p. 128). Housing needs which fall under physical needs, are recognised as a crucial aspect of relocation

(Fernando et al, 2020, p. 136). According to scholars, built environment plays a significant role in creating social capital and social cohesion (Baldwin & King, 2017). A study in Sri Lanka revealed that most of the respondents tend to prioritise their needs related to the built environment (Fernando et al, 2020, p. 128).

6.1.2 Types or Stages of Housing

- **Emergency Shelters**

Shelter terms are usually interpreted according to a 'three-stage recovery' model which begins with first response emergency shelter, followed by temporary or transitional solutions, and finally permanent housing (Davis and Alexander, 2016, cited in Brogden and Kennedy, 2021, p. 7). In situations where a disaster or conflict is ongoing, emergency shelters are utilised to move people away from imminent dangers. Provision of shelter in the initial phases of humanitarian response is identified as critical, with delays leading to possible life and health-threatening situations and violation of rights including the risk of gender-based violence (Norwegian Refugee Council and the International Federation of Red Cross and Red Crescent Societies, 2016, p. 10). It is believed that access to land can provide food security and livelihood opportunities, as well as much needed shelter as an emergency measure (Norwegian Refugee Council and the International Federation of Red Cross and Red Crescent Societies, 2016, p. 10). Attention to security of tenure is recognised as a vital part of a humanitarian response as the displaced are vulnerable to forced eviction by governments, de facto authorities, landlords, host communities and by local power-holders or parties to the conflict (NRC, 2015, as cited in Norwegian Refugee Council and the International Federation of Red Cross and Red Crescent Societies, 2016, p. 10). However, it is stressed that all disaster and conflict-affected persons should have access to emergency shelters irrespective of their tenure status and without discrimination of any kind (Norwegian Refugee Council and the International Federation of Red Cross and Red Crescent Societies, 2016, p. 10).

- **Temporary housing (temporary shelter)/ transitional housing**

Temporary or transitional housing could become a source of stress for occupants because of their temporary nature (REGARD, 2020, p. 10). A smooth transition from refugees' previous accommodation to permanent ones could alter such stress (Stewart and Shaffer 2015, as cited in REGARD, 2020, p. 11).However, it has been noted that when such housing settlements meet the cultural needs of the displaced, it could contribute to harmony among existing community groups within the displaced population (REGARD, 2020, p. 11). Wassel (2009, p. 6) notes that internally displaced persons (IDPs) should not be forced to leave transitional camps if they feel unsafe or have inadequate housing options. However, IDPs should also not be forcibly confined to camps, and should have their right to freedom of movement (Wassel, 2009, p. 6).

- **Permanent housing**

Permanent housing is recognised as a lasting solution for the displaced to build back. Humanitarians have called attention to the importance of housing, land and property (HLP) rights in providing durable solutions for both IDPs and refugees (Norwegian Refugee Council and the International Federation of Red Cross and Red Crescent Societies, 2016, p. 5). HLP rights, especially the right to adequate housing are referenced and defined in several international human rights instruments (Norwegian Refugee Council and the International Federation of Red Cross and Red Crescent Societies, 2016, p. 5).

6.1.3 Sri Lankan Context – Relocation and Resettlement Process

Sri Lanka is recognised as having a high probability for displacement (Ginnetti, 2015, as cited in Fernando et al., 2020, p. 129). The thirty-year civil war revealed successive waves of internal displacement, particularly from the north and east (Radhakrishnan et al., 2021, p. 76). IDPs)numbered about 680,000 in 2009 (IDMC, 2019, as cited in Radhakrishnan et al., 2021, p. 76)] and resettlement processes were initiated after the war (Radhakrishnan et al., 2021, p. 76).

Sri Lanka is also prone to natural disasters and disaster induced displacement and relocation is a frequent phenomenon (Fernando et al., 2020, p. 132). The tsunami that occurred in 2004 killed 40,000 people and made as many as 500,000 people homeless (Government of Sri Lanka 2005, as cited in Brun, and Lund, 2009, p. 15). In this context, it is clear that proficiency in relocation and resettlement processes is very important to Sri Lanka.

- **Emergency shelters (relief camps, temples, schools or play grounds)**

People are moved to emergency shelters as conflict or disasters strike or in the immediate aftermath of a calamitous occurrence. Usually these emergency shelters comprise of relief camps set up in safer locations or in public spaces such as temples, schools or play grounds. Research has highlighted that identification of the safest place in the relevant area which can provide shelter and the fastest routes to reach is important (Perera et al., 2020, p. 5). Mulligan and Nadarajah (2012) have highlighted that the presence of planned evacuation shelters can provide safety to the displaced and reduce the urgency of rehabilitation and reconstruction, thereby allowing those activities to be carried out in a well-planned and durable manner (Rathnayake et al., 2019, p. 282). The lack of well-planned shelters can pose difficulties and be harmful to shelters' residents, especially women and children live (Rathnayake et al., 2019, p. 282). Field studies have also revealed that although there are evacuation signs for tsunamis, there are hardly any for other types of disasters (Perera et al., 2020, p. 5). Perera et al. (2020, p. 5) have highlighted the need for more awareness, drills and training for better preparedness for crises.

- **Temporary shelters/ transitional housing – permanent housing options given to the displaced communities**

The displaced are temporarily housed in temporary shelters or transitional housing till permanent housing solutions can be arranged. Field studies have shown both positive and negative responses regarding temporary shelters. In the study under consideration, some respondents commented on the experience of building greater harmony among the community attributed to

the same residents having lived in temporary camps for two years where respondents claimed to have worked as a team in rebuilding their disrupted lifestyles (Fernando et al., 2020, p. 140).Some respondents looked back at the two years in temporary camps with satisfaction and gratitude to the officials of IMO, Dialog, Red Cross and various other NGOs that assisted them, and praised the goodness of the divisional secretary (Fernando et al., 2020, p. 137).The community also pointed out to the disruptions caused to their livelihoods whilst at the temporary shelters, which made them frustrated at the thought of building their own houses; "we couldn't do our farming when we were at the camps, because things were very tiring and we were very indecisive as to what we should do now" (Respondent C4, Community 35 years old) (Fernando et al., 2020, p. 139).

- **Permanent housing**

Sri Lanka has a ministry for Disaster Management but there is no single authority that is responsible for addressing the multiple issues pertaining particularly to victims of displacement (Fernando & Punchchihewa, 2013, as cited in Fernando et al., 2020, p. 132). Therefore, there is a need for a systematic framework that can incorporate all aspects of relocation (Fernando et al., 2020, p. 132). In Sri Lanka, the National Building Research Organisation (NBRO), is the main governance body that takes the lead in land selection for relocation programmes (Fernando et al., 2020, p. 140). The officials of the NBRO mentioned that they give greater significance to the built environment when they design the sites in both owner-driven and donor-driven methods of housing construction (Fernando et al., 2020, p. 140). Wassel (2009, p. 6) has highlighted the need for restitution and for IDPs to return, which includes housing. In addition to the physical needs of relocation and reconstruction, there are also psychological and socio-economic stresses that people often face during such phenomena. For an example, tsunami relocation and resettlement is found to have brought persistent uncertainty to fishermen in Hikkaduwa and Weligama, and threatened to disrupt their community ties and social networks (De Silva and Yamao, 2007). Planned relocation seeks to lessen such stresses by taking a holistic approach to resettlement.

However, much of the resettlement efforts in Sri Lanka have lacked aspects of well-planned resettlement. Fernando et al. (2020, p. 143) have pointed out that policy decisions are restricted to the planning stage of the housing setting in some resettlement projects, and have not taken the long term impacts of the relocation such as the economic, social and cultural needs into consideration (Fernando et al., 2020, p. 143). Although there is a clear resilient housing policy in place, there are concerns when it comes to the operationalisation of the said policy and there is an overall lack of consultation of the displaced communities in the relocation process (Fernando et al., 2020, p. 143).

The aftermath of the 2004 tsunami saw massive reconstruction and resettlement efforts and the slogan 'building back better' (Clinton, 2006; Steele, 2006) became a prominent discourse in post-tsunami reconstruction (Brun and Lund, 2009, p. 15). However, the Government of Sri Lanka' s (GOSL's) implementation of the policy 'One National Housing Policy' was wrought with professional, ethnic and cultural biases (Brun and Lund, 2009, p. 15). The failure of efforts to establish a Post-Tsunami Operational Management Structure (P-TOMS) to provide island- wide humanitarian support to the victims of the Tsunami is cited as an example of the prevalence of biases within the process (Brun and Lund, 2009, p. 15). Authors have also highlighted the limited participation of the primary stakeholders—the tsunami affected people—in the implementation of post-tsunami housing projects as another reason for its failure (Brun and Lund, 2009, p. 21).

The resettlement of IDPs displaced by the war has also taken criticism for lags and lack of resources. As of July 2019, about 26,000 individuals still needed to be resettled in the Northern Province, (Ministry of National Policies, Economic Affairs, Resettlement, and Rehabilitation 2019, as cited in Radhakrishnan et al., 2021, p. 76). It is noted that some of the resettled IDPs still lack access to basic needs such as permanent housing and water supplies (Yusoff et al., 2018, as cited in Radhakrishnan et al., 2021, p. 76).Some NGOs that participated in building permanent resettlement or restoration of damaged residences did not have the necessary knowledge regarding property rights in the country, resulting in situations such as change of property ownership between spouses (Ruwanpura, 2009, as cited in Rathnayake et al., 2019, p. 219).

Therefore, there is urgent need for a resettlement/relocation policy that addresses the needs of people who are displaced to resettle (Dissanayake et al., 2018, p. 1333). Dissanayake et al. (2018, p. 1333) suggest that disasters and disaster risk should be considered as a social problem in a socio-economic and political environment than a technical problem, and that social resilience needs to be strengthened with sound land use and relocation policies. They also suggest that the policies need to be efficient and stress that community participation in Disaster Risk Reduction initiatives is essential to achieve social resilience (Dissanayake et al., 2018, p. 1333).

6.1.4 Social Housing

As a principle, social housing looks at how a community can help provide affordable housing for its citizens who are unable to meet their housing needs independently. There are three essential principles to social housing, namely that ownership needs to be clearly defined and registered with the local government, that management and maintenance responsibilities must be clearly articulated and organised, and that eligibility criteria and apartment allocation procedures need to be clearly defined and communicated from the outset (D'Silva and Imamovi, 2015, p. 21)

Social housing strategy includes the following components:

- Formal working group
- 'Book of Rules'
- Affordable rent
- Family 'socio-economic card'
- Sustainable livelihood component
- Social linkages and networks

- Mixed-use developments
- A management system
- Alignment with international standard

(D' Silva and Imamovi, 2015, p. 21-23)

These components ensure that the process is orderly and accountable and moreover, meets the needs of the returnees. Under the sustainable livelihood component, each family receives a form of assistance to help cover monthly rent/utility payments and to rebuild household assets that were lost due to the conflict. The mixed-use development component promotes mixed use of buildings, allowing minority returnees, persons with disabilities and other marginalised groups to integrate physically, economically and socially with members of the majority community (D' Silva and Imamovi, 2015, p. 22). This can be an opportunity for reconciliation and to build up social cohesion between these different communities.

However, general support for resettlement into social housing includes:

- Offer support; e.g. viewings, travel costs, checklist of maintenance issues
- Check the proposed tenancy start date and advocate for a delay if necessary so that the client has time to prepare for the move (often the start date is as soon as the next week), including any impact on benefits, especially for Universal Credit claimants
- Check that the property is ready for occupancy—there have been cases of clients being signed up for uninhabitable properties e.g. Sitex metal sheeting not removed from the windows (Homeless link, 2013).

6.1.5 Case Studies

Google Drive Link:

https://drive.google.com/drive/u/1/folders/10p0Pto5aZd4RfqkG884-Yb0b9i4aEVDc

Please refer to the following case studies for you to get an in-depth knowledge on country specific contexts:

- Disaster, Displacement and Relocation: An Analysis of the Needs and Policy Implications on a Displaced Community in Sri Lanka (case study 39)
- Protecting Housing Rights for IDPs in Sri Lanka (case study 40)
- Resolving Protracted Displacement through Social Housing (case study 41)
- Handbook on Housing and Property Restitution for Refugees and Displaced Persons (case study 42)
- Post-disaster Housing Reconstruction in a Conflict Affected District, Batticaloa, Sri Lanka: Reflecting on the Climate Smart Disaster Risk Management Approach (case study 43)

6.2 The Importance of Housing (for social cohesion and integration, livelihoods, etc.)

6.2.1 The Importance of Housing

There is a direct correlation between conflict, secure property rights and food security; hunger is very often associated with poor or insecure access to land and housing (Norwegian Refugee Council and the International Federation of Red Cross and Red Crescent Societies, 2016, p. 10). Therefore, there is growing recognition in law and practice on the necessity of consciously undoing the effect of human rights violations and other causes of displacement through housing and property restitution (Norwegian Refugee Council and the International Federation of Red

Cross and Red Crescent Societies, 2016, p. 10). “The right to housing is framed in international law as the right to adequate housing, which is an aspect of the right to an adequate standard of living”, and the term “adequate” should not be interpreted narrowly, but broadly (UNHRC, 2020, p. 4). The criteria for an adequate standard of housing according to the Norwegian Refugee Council and the International Federation of Red Cross and Red Crescent Societies (2016, p. 8) include security of tenure, cultural adequacy, affordability, availability of services, materials, facilities and infrastructure, habitability, accessibility and location of the housing. The officials of the NBRO mentioned that they give greater importance to the built environment in resettlement projects, even in the selection of suitable lands for the projects (Fernando et al., 2020, p. 140).

The criteria that they consider in selecting a suitable land include,

1. Within 1 1/2 km of the town centre

2. Availability of electricity at the setting

3. Availability of water at the setting

4. Availability of a hospital in close proximity

5. Availability of a school in close proximity (Fernando et al., 2020, p. 140).

- **Availability of services, materials, facilities and infrastructure**

  Adequate housing must contain certain facilities essential for health, security, comfort and nutrition.

- **Location**

  Adequate housing must be in a location which allows access to employment options, health care services, schools, childcare centres and other social facilities.

- **Affordability**

Personal or household financial costs associated with housing should not threaten or compromise the attainment and satisfaction of other basic needs.

- **Security of tenure**

There is a multiplicity of legitimate tenure arrangements besides private ownership, such as public or private rental accommodation, cooperative housing, lease, emergency housing, occupation/rent of land or property in informal settlements, and other user or occupancy rights through statutory, customary, religious or hybrid arrangements, all with varying degrees of formality.

- **Social cohesion and integration—in relation with host community**

We have already established that built environment plays a significant role in creating social capital and social cohesion (Baldwin & King, 2017) and if planned with care it could play a role in the integration of the relocatees with their host communities. However, if not properly planned the effects could be detrimental. In relation to a study, there were concerns among a host community in Sri Lanka about losing their cemetery due to the resettlement setting (Fernando et al., 2020, p. 141). There was also a concern that the host community had been neglected when providing facilities and donations (Fernando et al., 2020, p. 141). However, the community organisations which had been charted by the relocation setting residents, and community organisation meetings held in the community centre at the relocation setting, had positive effects in bringing communities together (Fernando et al., 2020, p. 141).

6.2.2 Case Studies

Google Drive Link:

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Please refer to the following case studies to get an in-depth knowledge on the country specific contexts:

- The Importance of Addressing Housing, Land and Property (HLP) - Challenges in humanitarian response (case study 44)
- Forced Displacement and Housing, Land, and Property Ownership Challenges in Post-conflict and Reconstruction (case study 45)
- UNHCR - Housing, Land and Property (HLP) (case study 46)

6.3 Inclusive Housing (including supporting vulnerable and special needs groups)

As we mentioned earlier in chapters 3 and 4, inclusive housing should promote relationships and the inclusion of individuals as valued citizens in their communities, and in essence promote Quality of Life (Community Living British Columbia, 2016, p. 3). However, here we will discuss more about inclusive housing with regard to housing conditions and communities with special needs in housing as follows.

6.3.1 Communities with Special Needs in Inclusive Housing: Built Environment in Relation to Mass Displacement

Housing processes must note that there are communities with a range of special needs, and must address those needs. The intervention of Practical Action Sri Lanka was instrumental in devising appropriate disaster resilient housing that included features such as shrine rooms, wheelchair ramps, lowered electricity sockets and shop fronts, thereby increasing the inclusivity of the

beneficiaries' needs, allowing them to practice their faith, gain easy access to their houses, reach light and power switches and run small business in their homes (Ibrahim, 2010, p. 7). It was cited as a participatory process of including beneficiary knowledge of local hazards and knowledge of changing climate and opening up a space for local communities to participate in housing design and construction (Ibrahim, 2010, p. 7). Programmes such as drug awareness workshops for youth, counselling, financial empowerment and introducing recreational activities for elders, and health workshops for pregnant mothers have been implemented in tsunami resettlement settings in Sri Lanka (Fernando et al., 2020, p. 142).

- **Women**

Women and children require special attention and protection during displacement and return due to their increased vulnerability to sexual and gender-based violence, and greater need for health care and reproductive health services (Wassel, 2009, p. 7). Women and children are also vulnerable to the loss of property rights either through exploitation and patriarchal policies (Wassel, 2009, p. 7). Wassel (2009, p. 7), further highlights that special care should be taken not to use the term 'head of household' on legally binding forms as the tendency is for the husband to sign, even in instances where the wife is the original title holder. Resettled women who were formerly IDPs, including war widows and heads of households in war-torn areas in Jaffna, have faced particular economic and social challenges in the post-war context in terms of identification of livelihood opportunities, assuming new roles in their homes, and processing experiences of sexual and gender-based violence (FOKUS Women 2016, as cited in Radhakrishnan et al., 2021, p. 76). Radhakrishnan et al. (2021, p. 87) have observed how the intersection of income and gender, including the aspect of marital status have influenced participants' ability to access health care.

- **Children and young people**

Children, as mentioned earlier are vulnerable to sexual and gender-based violence, and loss of property rights either through exploitation or patriarchal policies (Wassel, 2009, p. 7). Wassel (2009, p. 7) has outlined the need for providing special procedures to consult and advise orphaned children on their housing, land and property rights (Wassel, 2009, p. 7). Children and young people's education, health and mental well-being can be affected during displacement and relocation processes (Fernando et al., 2020, p. 141) and may need special attention, care and counselling.

- **Aged people**

Elderly groups are identified as vulnerable during displacement (Fernando et al., 2020, p. 135) and are more likely to be left behind. Financial empowering and recreational activities for elders have been implemented in tsunami resettlement settings in Sri Lanka (Fernando et al., 2020, p. 142). The needs of elderly people, especially those who need additional care and attention in terms of health facilities must be addressed in a sustainable manner.

- **People with disabilities**

There is growing awareness regarding the need to include people with disabilities in both humanitarian action and sustainable development (IDMC, 2021, p. 1) and the Sendai Framework has called for a disability perspective to be integrated into disaster management (UNDRR, 2015, as cited in IDMC, 2021, p. 4). To ensure greater participation, people with disabilities must be included in needs assessments before and during displacement and should be given ample opportunities to be involved in the design, implementation, coordination, monitoring and evaluation of responses to displacement, as well as in broader disaster management and risk reduction (CBM, 2019, as cited in IDMC, 2021, p. 5).

The lack of data and research on the number, location, and experiences of IDPs with disabilities acts as a barrier in their consultation and active participation in displacement settings (IDMC, 2021, p. 1). This lack of accurate data also poses challenges to monitoring their needs, allocation of resources, tailoring support and assessing the inclusivity of responses (IDMC, 2021, p. 2). People with disabilities are often excluded from early warning systems and evacuations plans, preventing them from fleeing in a safe and timely manner (IDMC, 2021, p. 3) while evacuation centres, camp facilities and other temporary shelters are often inaccessible to people with disabilities (Stough, L. & D. Kang, 2014, as cited in IDMC, 2021, p. 3). Higher levels of unemployment, discrimination, and lack of access to quality education deters people with disabilities from finding decent work during their displacement (CBM, 2020, as cited in IDMC, 2021, p. 3). These issues need proactive intervention to give meaningful redress to people with disabilities.

- **Marginalised Communities (e.g. ethnic groups)**

It has been noted that the Government of Sri Lanka failed to provide unbiased island-wide humanitarian support to the victims of the 2004 tsunami (Brun & Lund, 2009, p. 15) and fully address the needs of those displaced by the ethnic conflict (Yusoff et al., 2018, as cited in Radhakrishnan et al., 2021, p. 76). The return of people who were displaced by the war have not met international human rights standards (International Crisis Group, 2010, as cited in Ibrahim, 2010, p. 21). Therefore, there is a danger of pre-existing social disparities and marginalisation being extended to the resettlement processes. Practical Action Sri Lanka sought to include beneficiaries into housing construction through masonry training, unskilled labour opportunities and payment for meal preparation for labourers and brought together Sinhalese masons to train local Tamil beneficiaries, facilitating exposure across ethnic/religious divides (Ibrahim, 2010, p. 7). Such intervention can benefit and build social and economic equity and cohesion.

6.3.2 Case Studies

Google Drive Link:

https://drive.google.com/drive/u/1/folders/10p0Pto5aZd4RfqkG884-Yb0b9i4aEVDc

Please refer to the following case studies for you to get an in-depth knowledge on the country specific contexts:

- Inclusive Housing: Advancing Good Lives in Welcoming Communities (case study 47)
- Disability, Disasters and Displacement (case study 48)
- The Experiences and Needs of Refugee and Asylum-seeking Children in the UK: A Literature Review (case study 49)
- Disasters and Displacement: Gaps in Protection (case study 50)

This lesson makes you think of how social factors play a major role in influencing the elements of housing. The next lesson is on infrastructure.

Chapter Summary

Intended Learning Outcomes	Summary
• Recognise different types of housing in terms of built environment in mass displacement	• Emergency shelter • Temporary shelters • Permanent housing • Social housing

• Analyse the role of social factors in housing	• Importance of housing ↓ Availability of services, materials, facilities and infrastructure ↓ Location ↓ Affordability ↓ Security of tenure ↓ Social Cohesion and Integration
• Define the concept of inclusive housing	• Inclusive housing should promote relationships and the inclusion of individuals as valued citizens in their communities, and in essence promote quality of life

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7. Infrastructure and Associated Services

Introduction and Intended Learning Outcomes

Infrastructure plays a vital role in built environment. This lesson will discuss the role of infrastructure in terms of built environment in a mass displaced context. At the end of this lesson, you will be able to:

- Recognise various infrastructure associated to built environment relation to mass displacement
- Analyse the role infrastructure in various displacement contexts

7.1 Water Supply, Sanitation and Hygiene (WASH)

7.1.1 Introduction: Importance of Infrastructure and Associated Services in Built Environment in Relation to Mass Displacement

As discussed in the previous chapter, built environment can include houses, public buildings like hospitals, and infrastructural facilities such as transportation, energy and telecommunication networks and water supply. With urbanisation and increasing population, built environment has expanded and become more intricate. During disasters and conflict, in addition to destruction of life and homes; these intricate and interdependent systems of infrastructure are destroyed, depriving people of basic services. Infrastructure failure occurs when the infrastructure is unable to withstand a hazard, and it can be catastrophic when there are interconnected impact such as power disruptions, breakage of water mains and fires that occur simultaneously (Little, 2002). Therefore, restoring housing and services back to people must be a priority of states, governments and other organisations that intervene on a humanitarian basis.

However, due to emergency needs of displacement, the first response is emergency shelter, followed by temporary or transitional solutions, and finally permanent housing (Davis &

Alexander, 2016, as cited in Brogden & Kennedy, 2021, p. 7). Provision of shelter in the initial phases of humanitarian response is critical for the safety of the lives of people (Norwegian Refugee Council & the International Federation of Red Cross and Red Crescent Societies, 2016, p. 10). HLP rights are referenced and defined in several international human rights instruments and are important to provide redress to the displaced (Norwegian Refugee Council & the International Federation of Red Cross and Red Crescent Societies, 2016, p. 5). Further, adequate housing must consider security of tenure, cultural adequacy, affordability, availability of services, materials, facilities and infrastructure, habitability, accessibility and location of the housing (Norwegian Refugee Council & the International Federation of Red Cross and Red Crescent Societies, 2016, p. 8).

7.1.2 Infrastructure and Associated Services – WASH

7.1.2.1 Water Supply

Access to water and sanitation is a fundamental human right for human survival, health and dignity (Heller, 2018, p. 2). According to the UN special rapporteur on the human rights to water and sanitation, all forcibly displaced persons are equally entitled to safe drinking water and sanitation irrespective of their current location, status bestowed on them, and eligibility for international refugee protection (Heller, 2018, p. 2). The framework of the human rights to water and sanitation must be applied at all times; before, during and after emergency situations, during development projects, and in other situations of displacement (Heller, 2018, p. 2). However, during emergencies this right is often compromised (Heller, 2018, p. 2). It is found that more children die from poor water quality and sanitation-related diseases than from direct violence in many conflicts (Heller, 2018, p. 2).The core obligations of the right to water ensure safe and equal access to the minimum essential amount of water that insufficient and safe for personal and domestic uses to prevent diseases (Heller, 2018, p. 4).The adequacy of water is evaluated according to its availability, sufficiency and continuous supply, physical access to water, economic access to water, access to information on water-related issues, water quality, and non- discrimination (Brookings-Bern Project on Internal Displacement, 2008, p. 118).

7.1.2.2 Sanitation

During an emergency, there is an immediate obligation for people to have access to the minimum essential level of water and sanitation on a non-discriminatory basis (Heller, 2018, p. 4). Although this is the core obligation, what forcibly displaced persons really require may vary, depending on the individuals concerned, cultural factors, locations or other specific factors (Heller, 2018, p. 4). The human rights of access to water and sanitation can provide guidance on the extent and means of fulfilling the needs of forcibly displaced persons (Heller, 2018, p. 4).The core obligation of the right to sanitation can be assumed as what every person needs for health, survival, and to live in dignity (Heller, 2018, p. 4). Concerns when providing sanitation include availability of a sufficient number of toilets, accessibility of the sanitary facilities to all including people with special needs, and safety and hygiene of the facilities provided (Brookings-Bern Project on Internal Displacement, 2008, p. 277).

7.1.2.3 Hygiene

Hygiene is given equal prominence as water and sanitation within humanitarian discourses. Hygiene, access to adequate water and sanitation are interconnected. This is why water, sanitation and hygiene (WASH) are considered together in refugee settings (UNHCR, 2020, p. 1). It is prescribed that sanitation facilities should be properly designed, constructed, and maintained with sanitation facilities in order to minimise health risks related to displacement (Brookings-Bern Project on Internal Displacement, 2008, p. 277). Studies have found that the practice of hygienic practices is inadequate among displaced populations, which is attributed to lack of knowledge among the study population (Shackelford et al., 2020, p. 15). After hygiene promoters were introduced in one camp, researchers observed that the hygiene practices improved (Flachenber, 2014, as cited in Shackelford et al., 2020, p. 15), suggesting the importance of awareness regarding hygiene practices among displaced. There is also a need for inclusivity in providing facilities to maintain hygiene. Although menstrual hygiene is not seen as

'life-saving', it is a vital issue for adolescent girls and women (Heller, 2018, p. 6), and hence, cannot be disregarded. Sanitary facilities should be accessible to all, including those with special needs (Heller, 2018, p. 6).

7.1.3 Sri Lankan Context – Sri Lanka's Water Supply and Sanitation Sector

The water supply and sanitation sector in Sri Lanka has improved over the years with significant assistance being provided by multiple external development assistance agencies (Fan, 2015, p. 1). Multiple grants were received in the aftermath of the tsunami of 2004 to rehabilitate and improve water and sanitation facilities in coastal regions (Fan, 2015, p. 1). The aftermath of the ethnic conflict also saw the development of water and sanitation facilities for the people located in the north and east (Fan, 2015, p. 1). According to sources, availability of water was one of the major factors considered in setting up camps for internally displaced persons (IDPs), during and in the aftermath of the conflict (Fan, 2015, p. 1). It was key to deciding the location of the Menik Farm, which was considered the largest IDP settlement in Asia and which at the height of the war extended over 700 hectares and provided emergency shelters for over 280,000 people by 2009 (Fan, 2015, p. 33). Given the large influx of IDPs in a very short time and the length of displacement, agencies who participated in the water, sanitation and hygiene cluster were challenged to provide necessary support (Fan, 2015, p. 33). A sustainable approach to the provision of water resorted to during resettlement was the rehabilitation of damaged wells (CEPA, 2017, p. 37). Few schemes have been utilised since to improve the quantity and quality of water made available to communities in conflict-affected areas (Fan, 2015, p. 33).

7.1.4 UNHCR WASH Manual for Refugee Settings

- **WASH, Protection and Accountability**

UNHCR is primarily responsible for coordinating, drafting, updating and promoting guidance related to WASH in refugee settings (UNHCR, 2020, p. 1). "WASH programmes in refugee settings must take into consideration UNHCR's protection and accountability principles" (UNHCR, 2020, p. 1). These principles are essential for the protection, safety and dignity of refugees. These principles include,

1. Consultation, participation and accountability of community
2. Equitable access to WASH infrastructure and services
3. Protection, safety and privacy
4. Menstrual hygiene management:
5. Cross-sector (UNHCR, 2020, p. 9).

- **Cash-Based Interventions for WASH Programmes in Refugee Settings**

Cash based interventions (CBIs) have proved useful for refugee WASH programming in urban settings where the refugee population is dispersed among the general population of the city or town (UNHCR, 2020, p. 28). Voucher schemes can also be established for buying necessary needs, including potable drinking water, hygiene supplies, or sanitary services (UNHCR, 2020, p. 28). WASH programmes should use CBIs to stimulate existing WASH markets and empower refugees to determine their own WASH needs (UNHCR, 2020, p. 28).

- **WASH Monitoring System**

Regular monitoring of WASH indicators is essential to understand if a WASH programme in refugee settings is successful in meeting basic needs of refugees and agreed targets of the process (UNHCR, 2020, p. 51-52). Reporting ensures that all actors including the refugees can understand the progress that is made by WASH activities (UNHCR, 2020, p. 51-52). Monitoring

is done using a monthly report card, and the standardised KAP Survey (UNHCR, 2020, p. 51-52).

- **WASH Knowledge, Attitudes and Practices (KAP) Manual**

The WASH Manual has been prepared through the collaboration of UNHCR's WASH Officers, UNHCR's sister agencies, experts and practitioners. This manual aims to provide guidance on general overarching principles that should be considered in all refugee WASH programmes including protection, safety and privacy, equitable access, consultation, participation and accountability, cross-sector collaboration, cost effectiveness, appropriate technology selection, cash based interventions, environmental protection and monitoring (UNHCR, 2020, p. 1). It also provides technical guidance and designs for supply of water, excreta management, solid waste management, disease vector control and hygiene promotion (UNHCR, 2020, p. 1-2). It is necessitated that household indicators are monitored on an annual basis using the UNHCR Standardised KAP Survey (Knowledge, Attitudes and Practices) (UNHCR, 2020, p. 51-52).

- **UNHCR Standard Designs for Water Supply, Excreta Management, Hygiene, Solid Waste Management, etc**

The technical guidance and designs for supply of water, excreta management, solid waste management, disease and vector control and hygiene promotion are supplied through the WASH Manual (UNHCR, 2020, p. 1-2). WASH programmes seek to ensure that there is an inclusive and consistent supply of WASH needs at all times and timely management transition to long-term cost effective community managed or household managed solutions (UNHCR, 2020, p. 5-7).

7.1.5 Case Studies

Google Drive Link:

https://drive.google.com/drive/u/1/folders/1Qe0ZtBcpCbnSqkZTI7bTWdq1EKEtmCGs

- Sri Lanka's Water Supply and Sanitation Sector: Achievements and a Way Forward (case study 51)

- Water Supply, Sanitation and Hygiene (WASH) in Mullaithivu (case study 52)
- The Tsunami Disaster in Sri Lanka UNICEF's Emergency Response: The First Six Weeks (case study 53)
- The Human Rights to Water and Sanitation of Forcibly Displaced Persons – UN (case study 54)
- WASH Assessment Report WASH Department – Herat, West Region Afghanistan (case study 55)

7.2 Access to Basic Needs and Services (food, livelihoods, health, education, recreation, etc.)

7.2.1 Introduction: Basic Needs and Services

The criteria for an adequate standard of housing includes security of tenure, cultural adequacy, affordability, availability of services, materials, facilities and infrastructure, habitability, accessibility and location (Norwegian Refugee Council & the International Federation of Red Cross and Red Crescent Societies, 2016, p. 8). The criteria considered by the National Building Research Organisation (NBRO), in selecting a suitable land includes

1. Proximity of 1 1/2 km to the town centre

2. Availability of electricity at the setting

3. Availability of water at the setting

4. Availability of a hospital in close proximity

5. Availability of a school in close proximity (Fernando et al., 2020, p. 140).

Respondents from a survey conducted in Sri Lanka highlighted that in addition to essential basic facilities such as shelter, water, and latrines, access to services including healthcare, education,

transport, and electricity had impacted markedly on the beneficiaries' lives after resettlement (CEPA, 2017, p. 40-41).

7.2.1.1 Food

Food is a basic need and a human right. There is a direct correlation between conflict, secure property rights and food security, with hunger being often associated with poor or insecure access to land and housing (Norwegian Refugee Council & the International Federation of Red Cross and Red Crescent Societies, 2016, p. 10). Conflicts often deprive people of food and obstacles to economic self-sufficiency, typically faced by IDPs and often leave them dependent on humanitarian aid for their daily food. Such dependency creates risks, including risks of sexual exploitation (Brookings-Bern Project on Internal Displacement, 2008, p. 105). Hence fulfilling the needs of adequate food and nutrition is of utmost importance.

7.2.1.2 Livelihood

Living in protracted displacement often means that the basic economic, social and psychological needs of the displaced remain unmet for years, and living in camps make them dependent on humanitarian aid delivered by international agencies or host governments (Lakhani, 2013, p. 12). They may also experience degradation of skills (Lakhani, 2013, p. 12). The processes in Cernea's impoverishment risks and livelihood reconstruction (IRLR) model in cases of conflict induced displacement are landlessness, joblessness, homelessness, marginalisation, increased morbidity and mortality, food insecurity, loss of access to common property, and social disarticulation (Amirthalingam & Rajith, 2009, p. 522). However, Amirthalingam and Rajith (2009, p. 521) provide evidence through their study that people forcibly displaced as a result of conflict are not static victims. IDPs from Sampur, who were within the purview of the study demonstrated the initiative to work within the limitations imposed by massive loss of assets and mustered up livelihoods (Amirthalingam & Rajith, 2009, p. 522). The study exposed various coping strategies adopted by IDPs and how different types of livelihoods respond differently to displacement (Amirthalingam & Rajith, 2009, p. 522). The IDPs who were relatively less impoverished are

those whose human assets are less reliant on non-human assets (Amirthalingam & Rajith, 2009, p. 521).

Lakhani (2013, p. 4) has highlighted the benefits of viewing forced displacement and the needs of those living in displacement as a development challenge rather than as a humanitarian crisis to avoid creating dependency of the displaced on external assistance, and to support them to seek and utilise opportunities for improving their lives. The displaced have proven themselves to be highly resourceful and many have been able to find new livelihoods (Lakhani, 2013, p. 4). Lakhani (2013, p. 12) further points out to how the displaced need to be supported in many instances to realise the opportunities they seek, to access education, and to access productive assets that they left behind.

7.2.1.3 Health

Urban slums or camps where most displaced persons live are characterised by inadequate environmental health conditions and services (CDC, 1992, as cited in Shackelford, 2020, p. 2). These conditions such as poor sanitation, are exacerbated by overcrowding (CDC, 1992, as cited in Shackelford, 2020, p. 2). The spread of communicable diseases is one most dominating problems (Shackelford, 2020, p. 21). However, a literature review by Yates et al. (2018) has found that WASH interventions based on “program design and beneficiary preferences” are effective in reducing disease transmission (Shackelford, 2020, p. 21). In addition to WASH, other facilities such as access to hospitals and medical care are also important. IDPs are to be provided with essential medical services including psychological and social services, with special attention to the health needs of women as well as to the prevention of contagious and infectious diseases (Brookings-Bern Project on Internal Displacement, 2008, p. 145).

7.2.1.4 Education

Muggah (2000, p. 200) has added limited access to education, decline in political participation, and increased risk of political and criminal violence to impoverishment risks of CID (Amirthalingam & Rajith, 2009, p. 522). Making sure that children and youth enjoy an undisturbed right to education is vital for their well-being and authorities concerned should ensure that the displaced, in particular displaced children, receive education which shall be free and compulsory at the primary level (Brookings-Bern Project on Internal Displacement, 2008, p. 145). It should be guaranteed that the education provided respects people's cultural identity, language and religion and efforts should be made to ensure the full and equal participation of women and girls (Brookings-Bern Project on Internal Displacement, 2008, p. 223).

7.2.1.5 Recreation etc.

Recreation facilities can help IDPs and refugees deal with the stresses and trauma they have undergone in the displacement process. Lack of recreational facilities like playgrounds has been a cause of disappointment in some relocation projects (Fernando et al., 2020, p. 141). Programmes including drug awareness workshops for youth, counselling, financial empowerment and recreational activities for elders have been implemented in tsunami resettlement settings in Sri Lanka (Fernando et al., 2020, 142). Facilities such as community centres at the relocation setting were also useful, especially in building community ties (Fernando et al., 2020, p. 141).

7.2.2 National Commitment to Basic services and Social Protection

- **Policies, legal framework and programmes**

Guiding principles laid out by 'Protecting Internally Displaced Persons: A Manual for Law and Policymakers' recognises that national authorities have the primary duty and responsibility to provide protection and humanitarian assistance to IDPs within their jurisdiction (Brookings-Bern

Project on Internal Displacement, 2008, p. 250). National authorities are responsible to make sure that internally displaced persons shall enjoy, in full equality, the same rights and freedoms under international and domestic law as do other persons in their country and that they shall not be discriminated against in the enjoyment of any rights and freedoms on the ground that they are internally displaced (Brookings-Bern Project on Internal Displacement, 2008, p. 249). A National Policy on Durable Solutions for Conflict-Affected Displacement, which affirms the need to respond to all IDPs and displacement-affected populations in a manner that is non- discriminatory, fair, just and equitable, was approved by the Sri Lankan Cabinet in August 2016 (CEPA, 2017, p. 23). In 2015, with the release of land, the government took a lead in resettlement and initial needs such as the clearance of lands, roads and mine clearance. However, after such initial assistance, other service providers and actors were involved to provide similar types of assistance such as shelter, latrines and water supply (CEPA, 2017, p. 23). The following table mentions the key actors instrumental in providing many of the services in this context:

Resettlement assistance	**Providers**
1. Land clearance	Ministry of Resettlement, WFP, UNHCR, RDF
2. Mine clearance	HALO trust, SOND
3. Clearance of access roads	Ministry of Resettlement, Pradeshiya Sabha (NELSIP), WFP
4. Shelter (temporary, transitional shelter and permanent housing)	Ministry of Resettlement, UNHCR/JSAC, UNHCR/Sevalanka, Karunya Foundation, ARR
5. Food security	WFP, Sevalanka
6. Water facilities (water supply and well clearance)	Pradeshiya Sabha, Ministry of Resettlement, SLRC, SDC, UNICEF, National Water Supply and Drainage Board, SL Navy, Peace Winds Japan, Sarvodaya, AnbeSivam

7. Sanitation (latrines and hygiene promotion)	UNHCR/JSAC, UNHCR/Sevalanka, SOND, Pradeshiya Sabha, UNICEF, UNHCR/RDF, ARR, Offer Ceylon, Sarvodaya
8. Education	CCH, ARR
9. Health	MoH, UNICEF
10. Electricity	CEB
11. Transport	SLTB

(Amirthalingam and Lakshman, 2010, as cited in CEPA, 2017, p. 23)

- **Coping and community-based initiatives**

Scholars have pointed out that community participation in Disaster Risk Reduction (DRR) initiatives is essential to achieve social resilience (Dissanayake et al., 2018, p. 1333) and community organisations which have been charted by the relocation setting residents play a role in social cohesion and integration of communities (Fernando et al., 2020, p. 141). The Centre for Poverty Analysis (CEPA) also found that community-based organisations played a role in awareness programmes among IDPs regarding the physical return to their places of origin (CEPA, 2017, p. 28). Community-based initiatives can help threaten community ties and provide mechanisms for IDPs to cope with the stresses of returning.

- **Aid agency-led interventions**

Lakhani (2013, p. 4) has highlighted the need for economically and socially sustainable solutions to protracted displacement. Accordingly, the benefits of viewing forced displacement and the needs of those living in displacement, as a development challenge rather than as a humanitarian crisis to avoid creating dependency of the displaced on external assistance are of utmost importance (Lakhani, 2013, p. 4). Some experts believe that humanitarian interventions should move away from refugee camps altogether, and argue for the integration of refugees into existing urban areas rather than being isolated in a camp where they must rely on foreign aid (Tull, 2017,

p. 11). However, it must be recognised that aid agency-led interventions have provided many services including shelter, other and basic human rights in many displacement settings.

- **Social protection - food security and nutrition**

  - ↓ Poverty reduction: Livelihood support, income generation, capacity building, support to markets, public works
  - ↓ Child protection: Projects addressing children at risk, children separated from families, children with disabilities, street children, increasing access to education for children
  - ↓ Emergency assistance: Assistance to displaced, returnee and host populations affected by conflict (in all the above sectors, as well as non-food items and shelter)

7.2.3 Successful Strategies for Access to Basic Needs and Services – UNHCR

7.2.3.1 People at the centre and encouraging participatory approaches

The necessity for community participatory approaches where the concerned are included in planning and action of resettlement processes have been stressed as an important factor in the relocation process (Brun & Lund, 2009, p. 21; Dissanayake et al., 2018, p. 1333; Ibrahim, 2010, p. 7; IDMC, 2021, p. 5). Resettlement practitioners have advocated that the resettlement process should be approached as a negotiation process, with the people to be resettled being treated as equal parties to a negotiation that is conducted fairly and in a spirit of good faith, informed participation, openness, and mutual respect (Vanclay, 2017, p. 15). This process could also be sensitive to the needs of host communities and aspects such as gender and cultural factors (Vanclay, 2017, p. 15). People-centred and participatory approaches can make people feel included and give them a sense of empowerment over the decisions made regarding them.

7.2.3.2 Applying a holistic approach

Holistic approaches to infrastructure and services are very important as infrastructure and services tend to be interconnected and interdependent. This is more apparent in provision of WASH services as noted in resettlement settings and processes (Herat Wash Team, 2019, p. 15). Scholars point out that it is not adequate to merely restore people's livelihoods; "Given the trauma involved with the resettlement process and the huge disruption to people's lives, to be compliant with human rights expectations, it is necessary to improve people's well-being" (van der Ploeg & Vanclay, 2017, as cited in Vanclay, 2017, p. 14). A holistic approach to displacement and resettlement could provide meaningful redress, ensure well-being of the people across all sectors and work to ensure non-recurrence.

7.2.3.3 Creating opportunities for partnerships

The idea that the resettlement process should be approached as a negotiation process, with the people to be resettled being treated as equal parties to a negotiation has already been discussed (Vanclay, 2017, p. 15). Vanclay (2017, p. 18) stresses the need for IDPs to be resourced and enabled to be effective actors who can negotiate to protect their own interests. "A negotiated process provides a basis upon which they share responsibility and ownership to ensure that the resettlement proceeds effectively" (Vanclay, 2017, p. 18). Such processes may allow greater opportunities for partnership between communities, governments and aid organisations and result in the satisfaction of all parties concerned.

7.2.4 Case Studies

Google Drive Link:

https://drive.google.com/drive/u/1/folders/1Oe0ZtBcpCbnSqkZTI7bTWdq1EKEtmCGs

- Sri Lanka: A Hidden Displacement Crisis – IDMC (case study 56)
- Livelihoods, Basic Services and Social Protection in Democratic Republic of the Congo (case study 57)
- Displaced Livelihoods in Sri Lanka: An Economic Analysis (case study 58)
- Forced Displacement: Moving from Managing Risk to Facilitating Opportunity (case study 59)
- Protecting Internally Displaced Persons: A Manual for Law and Policymakers (case study 60)
-

This lesson discusses the vital role played by infrastructure in mass displacement. With this we come to the end of the main lessons. Next, we reflect on all the lessons we have learned so far and propose recommendations.

7.3 Transport Infrastructure and Services

Kaklauskas and Gudauskas (2016) state that a built environment is developed in order to satisfy residents' requirements. Human needs can be physiological or social and related to security, respect, and self-expression (Kaklauskas & Gudauskas, 2016). People want their built environment to be aesthetically attractive and an accessible place with well-developed infrastructure, convenient communication access, and good roads, and the dwelling should also be comparatively cheap, comfortable, with low maintenance costs, and have sound and thermal insulation of walls (Kaklauskas & Gudauskas, 2016). Transport infrastructure, its integrative components, the relationship with objects in the environment, and even participants play a key

role in the formation of an attractive living environment (Griškevičiūtė-Gečienė & Griškevičienė, 2015). However, in the global context according to Griškevičiūtė-Gečienė and Griškevičienė (2015), in order to evaluate the transport infrastructure development projects in urban areas of the European Union (EU) programming period 2003–2007 and 2007–2014, both Lithuania and other EU countries use these following guiding indicators of:

- functionality:
  - ↓ the cost of travel time and vehicle mileage
  - ↓ road accidents (those killed, injured)
  - ↓ vehicle noise and air pollution (emissions)
  - ↓ psychological discomfort due to fragmentation of the living environment by communication corridors (barrier effect)
- consequences, effectiveness and expenses:
  - ↓ transport and technical infrastructure maintenance costs
  - ↓ costs related to special equipment for road safety and the environment (Griškevičiūtė-Gečienė & Griškevičienė, 2015)

7.3.1 Sri Lankan Context – Resettlement Policy Framework (RPF)

According to the Resettlement Policy Framework, transport infrastructure and services in Sri Lanka regarding built environment can be discussed under the following themes:

7.3.1.1 National Policy on Transport in Sri Lanka

The government plays a major role in the transport sector in Sri Lanka. Public enterprises are responsible for direct provision of road, railway, and port infrastructure, and there is no private provision of infrastructure (RPF, 2018). The government plays a smaller role in the direct

provision of transport services, with the exception of railways which are in the hands of Sri Lanka Railways, a government department, and bus transport where the government is a 50% shareholder of public bus companies (RPF, 2018). The poor performance of the transport sector has been mainly because the public sector has overextended itself as a direct provider of facilities and operator of services and is failing to meet important functions as manager of competition, custodian for the environment, and guarantor for social concerns (RPF, 2018).

7.3.1.2 The Road Development Authority (RDA)

RDA has a significant capacity to manage environmental and social concerns when developing a road network as a result of continuous engagement with financing institutions like the World Bank and Asian Development Bank (ADB) (RPF, 2018). The national environmental management regulations mainly apply to new road construction activities and not for existing road rehabilitation. However, natural resources used during construction or rehabilitation activities requires obtaining necessary licenses and permits including the Environmental Protection License (RPF, 2018).

7.3.2 Transport and Sustainability: The Role of the Built Environment

According to Crane and Scweitzer (2014), there are certain demonstrable benefits to travel, particularly economic benefits such as job access and other forms of trade and interaction. These vary by place and time, by mode, and so on, but benefits to travel are present. As are costs, in terms of resource use, contamination, health and safety risks, time spent in traffic jams, noise, social equity, and generally in the way many modern neighbourhoods seem to favour cars over people (Crane & Scweitzer, 2014). Literature reveals that transportation infrastructure provides few benefits to many low income, ethnic neighbourhoods; indeed, they protest that transportation investments disproportionately degrade those environments (Crane & Scweitzer, 2014). Along with opposition to road building, low income and minority coalitions also argue for better public transport services for transit dependent, primarily low income, disabled, children, and seniors (Crane & Scweitzer, 2014). However, the dual themes of unfair exposure and unfair access are now commonly labelled 'environmental injustice in transportation' (Crane & Scweitzer, 2014).

Crane & Scweitzer (2014) further discuss the role of the built environment in sustainable transport and explain that the discussion has evolved from one strictly centred on avoiding vehicle pollutants to a broader notion of transportation resource costs. In this sense, the goals of sustainable transport are two-fold (Crane & Scweitzer, 2014):

- the preservation of environmental quality and public health across generations
- the redressing of social inequality resulting from transportation investments.

Therefore, in the end, the built environment will always be a key foundation of sustainable development, and sustainable transport takes a part of it.

7.3.3 Case Studies

Google Drive Link:
https://drive.google.com/drive/u/1/folders/1Qe0ZtBcpCbnSqkZTI7bTWdq1EKEtmCGs

- FIJ: Transport Infrastructure Investment Sector Project, South Asia (case study 61)
- Project-induced Displacement and Resettlement: From Impoverishment Risks to an Opportunity for Development? (case study 62)
- Review of PBF Funded Project: “Support for Sri Lanka national reconciliation efforts by addressing grievances of the concerned sections of the population through targeted resettlement of the last of the conflict affected internally displaced persons” (case study 63)
- Framework Development and Infrastructure Financing to Support Public Private Partnerships, Sri Lanka (case study 64)

7.4 Energy Infrastructure and Services

Energy services are essential to improve displaced people's life chances, whether through powering clinics, pumping and treating water, enabling clean cooking, lighting public spaces, or facilitating educational and productive activities (Lahn, 2019). Lahn (2019) further discusses that yet, displaced people were until recently largely absent from the global energy access agenda. Only recently has energy come to the fore of discussions in the humanitarian sphere (Lahn, 2019).

7.4.1 A Diverse Context for Energy Access in Displacement Situations

According to Lahn (2019), displacement crises take a wide variety of forms, with varying degrees of local and political acceptance. A series of factors that differ from context to context and will affect efforts to improve energy access among displaced populations are as follows (Lahn, 2019):

- Political economy and legal status of displaced population
- An unstable existence
- Proximity to urban services
- Level of government acceptance and resilience coordination
- Willingness and ability to pay

7.4.2 Approaches and Possible Options for Providing Modern Energy Services for Displaced Populations

According to Lahn (2019), the diagram below indicates different areas of the energy system that may benefit from assistance in a mass displacement situation. These range from the traditional supply side interventions of upgrading and extending the grid and providing utility scale generation plants to micro and off-grid solutions for camp dwellers (Lahn, 2019). Lahn (2019),

further explains that this is not exhaustive but gives an idea of the solutions being discussed globally in the nascent fields of 'humanitarian energy' and 'crisis response and resilience'.

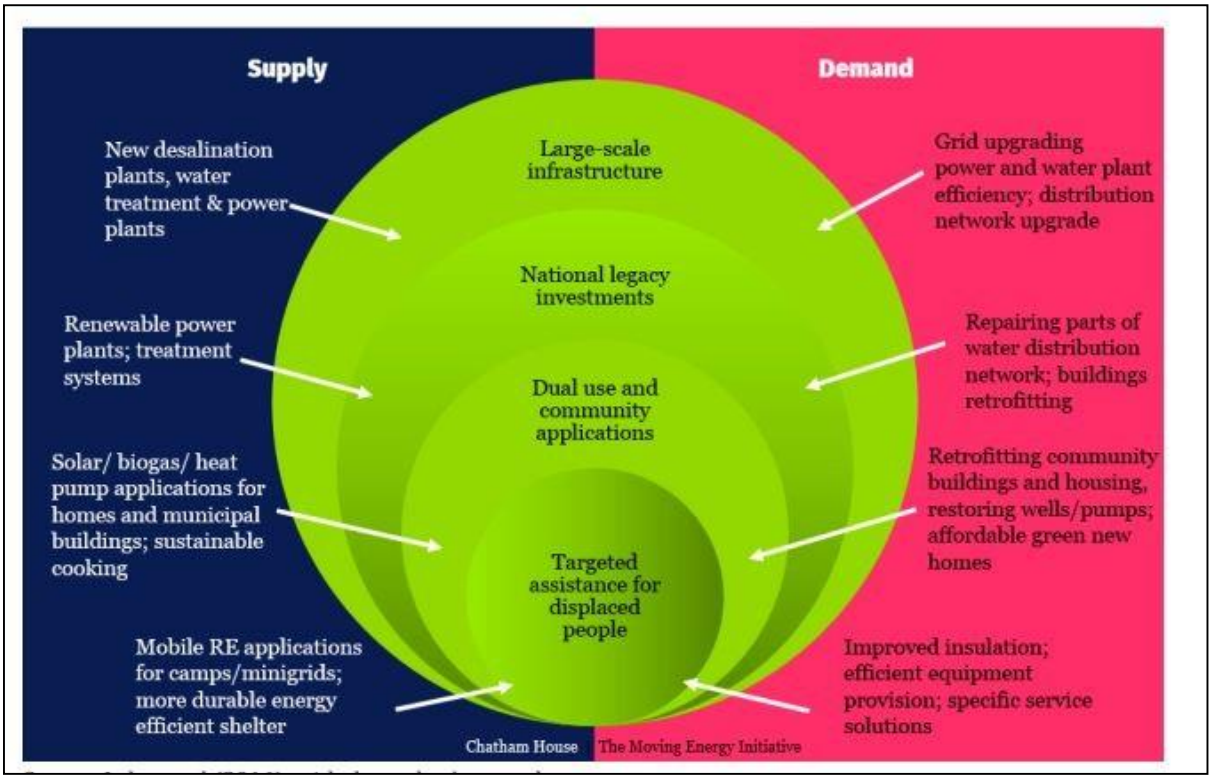

Figure 7.1: Areas of potential support for energy in a displacement crisis (Lahn, 2019, p. 6)

7.4.2.1 Improving energy access for displaced populations in camps or settlements

Lahn (2019) states that the following options are not the only ones, nor are they mutually exclusive. In several camps, more than one of the following are being planned or trialled. However, coordination between various relevant authorities and actors in planning and gaining approvals is key; otherwise, one intervention may override or undermine the market for another (Lahn, 2019).

- Grid connections and improvements
- Power plants
- Specific camp facilities

- Market-based solution
- Better shelter

7.4.2.2 Improving energy access for urban and non-camp displaced populations

On the other hand, where the majority of Internal Displaced Person (IDPs) or refugees who live among the host population, energy access issues for persons of concern cannot necessarily be separated from the local and national ones (Lahn, 2019). This means that efforts to improve energy access should include and not necessarily discriminate between locals and displaced people (Lahn, 2019). Therefore, the following factors need be considered while improving energy access for urban and non-camp displaced population:

- Better, more efficient housing
- Tying energy to development outcomes
- Working with what is going well already

7.4.3 Case Studies

Google Drive Link:
https://drive.google.com/drive/u/1/folders/1Qe0ZtBcpCbnSqkZTI7bTWdq1EKEtmCGs

- Thinking Differently about Energy Access in Displacement Situations (case study 65)
- Energy Services for Refugees and Displaced People (case study 66)
- Energy and Displacement in Eight Objects: Insights from Sub-Saharan Africa (case study 67)

7.5 Waste Management Infrastructure and Services

Waste management infrastructure is an infrastructural facility that is essential for the proper maintenance of human life. Especially in situations of rapid mass displacement, waste management infrastructure is of critical importance to public health as ill managed waste can attract insects which may carry diseases; unattended waste piles can pose a fire risk while waste can contaminate water supplies, and block water courses, causing flooding (Rouse & Reed, 2013, p. 27). Waste is any type of waste generated by human beings and it includes general domestic waste and emergency waste from the packaging of emergency supplies (Reed & Mena- Moreno, 2016, p. 9, 19). In emergencies, solid waste management is associated with the WASH cluster in humanitarian response under environmental sanitation as well as shelter and settlement (Reed & Mena-Moreno, 2016, p. 15).

7.5.1 Waste Management in a Mass Displacement Setting

In mass displacement, waste management infrastructure is based on a cluster of interrelated management activities (Reed & Mena-Moreno, 2016, p. 16). These include storage of waste, collection from the storage containers, transfer of waste to larger containers, transporting waste to disposal sites, recycling waste and sustainable management of the disposal site. According to Reed & Mena-Moreno (2016), in the immediate aftermath of a mass displacement the responsibility of waste management workers are to clear any toxic/poisonous waste materials, remove blockages from drainage channels, manage dead bodies, and set up an onsite temporary waste disposal system. The next step is to conduct an assessment of the existing waste management pathways and issues with a focus on the types and volume of waste generated (Care International & ProAct Network, n.d., p. 5).

Moreover, consulting the users of the waste management system before and during its design, construction and use is compulsory to assure effective and adequate implementation (Care International & ProAct Network, n.d., p. 6). Adding to this, Rouse & Reed (2013, p. 28) suggest

that it might be beneficial for the displaced to 'overcome their trauma' by making them involved in tasks such as cleaning their living quarters, and employing displaced individuals brings an income to these communities (Rouse & Reed, 2013, p. 28). Then there is the transportation of collected waste for disposal and the method of transportation can be decided by considering the rates of waste generation, ease of access, and the distance to the disposal site/s (Rouse & Reed, 2013, p. 28-29; Reed & Mena-Moreno, 2016, p. 17). It is a given that in the initial waste disposal process, it has to be carried out at temporary waste disposal sites such as communal pits or large containers. In such instances, the most important factor to consider is the distance from the displaced settlement. The disposal sites should not be too close to the settlement as this may create issues such as the spread of diseases, contamination of groundwater and stench for the displaced population. Further, the site should not be too far away from the settlement so the transportation of waste becomes difficult and expensive (Reed & Mena-Moreno, 2016, p. 27).

The most common method of final disposal in mass displacement settings is disposing to a landfill (Reed & Mena-Moreno 2016, p. 24-25). If a landfill is employed as the final disposal site, protective action such as digging drainage ditches, keeping the water content of the waste as low as possible, regularly covering the site with chemicals to build an impenetrable layer, and stationing the site as far as possible downwind from the displaced settlement are important (Reed & Mena-Moreno, 2016, p. 25).

7.5.2 Managing Faecal Waste in a Mass Displacement Setting

Faecal (also called 'caecal sludge management') waste management is the "process of storing, transporting and disposing of human excreta" (Grange, 2016, p. 9). In mass displacement the management of caecal waste is a major challenge. According to Grange (2016), women and children suffer the most if caecal waste is not appropriately managed as it affects their privacy as well as dignity. The importance of proper management of caecal waste is evident from statistics which suggest that more than 40% of deaths in emergency situations are caused by faecal-oral diseases (Anderson et al., 2015, p. 13872). In a mass displacement setting, the main aim of the caecal disposal programmes is to "minimise contamination related to high-risk practices and

reduce exposure and Faecal-oral disease transmission" (Reed, 2013, p. 51; Johannessen et al, 2012, p. 4). Reed (2013) suggests that decontamination steps have to be taken in areas such as water sources and agricultural land to avoid the contamination of the food chain or water supplies (Reed, 2013, p. 55).

Secondly, it is important to carefully plan faecal disposal and management by employing a rapid assessment. This includes involving communities in the planning and design process, which Reed argues, promotes self-respect and self-reliance (2013, p. 51-54). All planning activities should adhere to Sphere standards which introduces minimum service levels for faecal disposal (Grange, 2016, p. 11). Other important factors to be considered when setting up a faecal management system include high water tables, sandy soils and densely populated urban areas (Johannessen et al, 2012, p. 2-3). Grange (2016, p. 16) identifies a number of faecal matter collection methods such as dug pit latrines, raised pit latrines, deep trench latrines, bucket latrines, packet latrines, and if none of the above mentioned options are not applicable, demarcating a designated defecation areas.

In terms of sludge disposal, the effectiveness of disposal often depends on the availability of local sewer transport vehicles, their condition and transport capacity (Grange, 2016, p. 11, 18). If the capacity is lacking, this can present serious challenges as pit latrines which are not emptied regularly can result in people resorting to open air defecation (Grange, 2016, p. 11). Moreover, another factor to be considered is the capacity of local faecal sludge disposal areas to accept the large amount of faecal matter generated. Therefore, resources should be allocated to secure dedicated dumping sites and to improve the dumping site to prevent contamination of local water sources (Grange, 2016, p. 12, 18).

7.5.3 Case Studies

Google Drive Link:
https://drive.google.com/drive/u/1/folders/1Qe0ZtBcpCbnSqkZTI7bTWdq1EKEtmCGs

- Environmental Health in Forced Displacement: A Systematic Scoping Review of the Emergency Phase (case study 68)
- Data Collection Survey on Solid Waste Management in Democratic Socialist Republic of Sri Lanka (case study 69)
- Wastewater Treatment Plants in Rapid Mass Displacement Situations (case study 70)
- Disaster Waste Planning in Nepal (case study 71)

Chapter Summary

Intended Learning Outcomes	Summary
• Recognise various infrastructure associated to built environment relation to mass displacement	• Water supply, sanitation and hygiene (WASH) • Access to basic needs and services (food, livelihoods, health, education, recreation, etc.) • Transport infrastructure and services • Energy infrastructure and services • Waste management infrastructure and services (including drainage, wastewater treatment, reuse and recycling of materials, etc.)

• Analyse the role infrastructure in various displacement contexts	• Built environment can include houses, public buildings like hospitals, and infrastructural facilities such as transportation, energy and telecommunication networks and water supply. • With urbanisation and increase of population, built environment has expanded and become more intricate. • During disasters and conflict, in addition to destruction of life and homes, these intricate and interdependent systems of infrastructure are destroyed, depriving people of basic services.

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8. Lessons Learned from Built Environment Intervention Cases

Introduction and Intended Learning Outcomes

This lesson is structured in a way where students have the opportunity to reflect on the learnings from built environment interventions discussed in previous lessons.

At the end of this lesson, you will be able to:

- Recognise shortcomings of the built environment interventions that have been discussed throughout the module
- Operationalise recommendations to make built environment interventions

In retrospect of what has been discussed under previous lessons, in the context of mass displacement and build environment, the following recommendations can be made:

8.1. Cultural and Economic Appropriateness

In terms of mass displacement, we have already discussed how planned relocation plays a major role. In this context, the housing unit plays a major role, and thereby it is vital to consider social and economic aspects. In terms of social aspects, it is important to understand the cultural background of the displaced communities. For example, in the Sri Lankan context, there is a relocated community who is dissatisfied with their relocated setting due to the fact that the settlement is located on a cemetery. This Sinhala Buddhist community believes in cultural rituals that purify a land and are disappointed such purification has not been conducted by the project officials (Fernando et al., 2020). On the other hand, the Hindu community celebrates their new year by worshiping the sun. Hence, Hindu underserved settlers in Colombo who have been relocated into high-rise low income settlements are dissatisfied that their houses have no windows except the main door.

Culture can also be interpreted as lifestyle. In developing the housing units and infrastructure it is vital to evaluate the lifestyles of the communities that the interventions are made for. There is no use of giving them a lift, a toilet with a commode and a washing-machine room as the community has no knowledge to use them. Hence, it is important to give the community relevant training on how to utilise and maintain these facilities.

Economic appropriateness is the other factor. A housing unit should have a relevant special requirement to accommodate the requirements of the livelihoods of the communities. For example, if their livelihoods are based on transportation relevant parking spaces have to be allocated. If they engage in self-employment such as sewing and grocery stores, the housing units should have a special requirement to accommodate such activity without disrupting the daily lives of the inhabitants. On the other hand, when donor driven options are given as a relocation option, it is important to do adequate budgeting and make sure that the community is given appropriate funding, material and time to build up their houses.

8.2. Community and Host Community

8.2.1 Understanding the Displaced Community and Host Community

As per the discussion above, it is important know background of the community when planning built environment interventions post-displacement. Before planning out the interventions, the built environment intervention agencies should conduct a needs and social assessment to build databases of the following details that will have a direct impact on how built environment interventions should be strategised:

- Cultural background of the community
- Livelihood strategies
- Existing social networks and organisations
- Specific vulnerabilities—disabilities, chromic diseases etc.

On the other hand, the needs and the requirements of the host community shall not be curtailed. Hence, proper details of the cultural and economic background details of the host community should be included in the strategic plan of the built environment intervention. This will be useful for the sustainability of the intervention and will prevent possible conflicts that might take place between the displaced community and the host community.

8.2.2 Involvement of the Displaced Community and Host Community

If you think of the knowledge you have gained throughout the module, you may remember that all the existing conceptual frameworks (Cernea 2000 and Scudder 2005) endorse the need for getting the displaced community involved in the relocation process. Likewise, it is vital to involve both displaced community and host community in planning built environment interventions. Their involvement in the process will expose the real needs of the communities to agencies.

8.2.3 Inclusion of Most Vulnerable Communities

Within the displaced community, there are different levels of members with relevant needs which will have a direct impact on the requirements of the built environment interventions. Hence, it is important to recognise the types of vulnerable communities in the displaced community. For example, if there are wheelchair users, the plans have to be mindful of accessibility with ramps and lifts.

8.3 Managing Built Environment Interventions

8.3.1 Coordination among Stakeholders

We have already discussed the stakeholders involved in built environment interventions:

- Planner
- Investors and developers
- Owners
- Architectures
- Engineers

It is vital that these stakeholders coordinate accordingly to prevent any conflicts that may occur. In a case study in Sri Lanka, it was pointed out that there was a lack of coordination between the developers who were in-charge of the temporary shelter and permanent shelter which ended up in the removal of the temporary shelter huts (Vijekumara, 2015). Hence, solid coordination is vital.

8.3.2 Expansion of Stakeholders

Throughout this module, you may have realised that we emphasised the need for a holistic approach towards built environment interventions. This calls for a need for a wider scope of stakeholders in built environment interventions. Specifically, the inclusion of social scientists to conduct the above-mentioned social impact and needs assessments. Hence, expansion of stakeholder discourse in built environment interventions and mainstreaming the role of social scientists are important. A holistic approach to built environment interventions could provide meaningful redress which will ensure well-being of the people across all sectors and work to ensure non-recurrence.

8.3.3 Management and Governance

Management of built environment interventions should include a proper action plan without considering the intervention as a one-off encounter. It is important to have a plan for monitoring and evaluation of the built environment interventions. This can be addressed in the existing governing structures in relation to built environment interventions. What is important is to have a legal framework to hold the stakeholder accountable to their actions.

8.4 Infrastructure and Neighbourhood Facilities

In terms of built environment interventions, it is important to keep in mind that it is not just a housing unit. Therefore, neighbourhood facilities and infrastructure are important. In deciding the relevant infrastructure for the intervention, once again it is important to recognise the nature of the community. If the there are children in the displaced community, a play area and day care centres are useful. Further, conversations with the youth in the community will allow the planners to decide whether they need a basketball court or a playground. Further, the infrastructure should be sufficiently and continuously supplied to every member with no discrimination. Further, the planners have to be mindful that the infrastructure and facilities of the host community shall not be compromised in this context.

With this, your journey with us comes to an end. I hope these eight lessons were helpful for you to expand your knowledge on the nexus between built environment and mass displacement.

8.5 Recommended Reading

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5) Online teaching content

5.1 Online teaching materials

5.1.1. Literature and other study materials / resources:

5.1.2. Main reference literature:

5.1.3. Recommended reading:

5.1.4. Relevant journals:

5.1.5. Online resources:

5.2 Online teaching strategy

Lesson	Lesson Content Method	Titles of the extra teaching materials used	Continuous assessment method	Continuous assessment topic	Lesson duration	Continuous assessment deadline	Live sessions/ Discussion forums (if any)