



THE OLD & THE FUTURE

Research Plan of TU Delft, Dwelling Graduation Studio:

Global Housing Lanxin He

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How can an affordable housing system prioritize the living conditions of the elderly, simultaneously remaining suitable and adaptable over the years for potential changes in demographic characteristics within these tea garden communities?

Lanxin He

5807891

Research Plan

Dwelling Graduation Studio: Global Housing

Architecture of Transition in the Bangladesh Delta

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Figure 1 Workers were plucking tea leaves in the plantation

INTRODUCTION

Colonial influence & Industrialization and urbanization & Labor conditions of tea garden community

Bangladesh, predominantly an agricultural nation, boasts worldwide recognition for its tea industry. Generally speaking, this country boasts one of the world's largest proportions of its population engaged in various labor sectors¹, notably in the garment, but also in agriculture, and service industries. However, the labor conditions in the tea industry differ significantly.

The tea plantations in the hilly regions of Sylhet and Chittagong have played an important role in shaping this industry, with their origins rooted in the colonial plantation history of this region². Tea plantation workers were brought from the different provinces of India, especially those poverty-stricken regions, by brokers employed by the tea companies³. These laborers, along with their families, were tied to the land for tea cultivation, gradually giving rise to communities centered around the plantation sites. Meanwhile, due to the history of labor migration, their different ethnic sub-culture kept them independent from mainstream local Muslim communities⁴. Because of their relative isolation from urban areas, these sub-cultural labor communities have been significantly influenced by colonial plantations and contemporary tea companies.

1 BEARNOT, EDWARD. "Bangladesh: A Labor Paradox." *World Policy Journal* 30, no. 3 (2013): 88–97.

2 Khan, Ashrafuzzaman, and Kristian Lasslett. "“WE WILL GIVE OUR BLOOD, BUT NOT OUR LAND!”—REPERTOIRES OF RESISTANCE AND STATE-ORGANIZED LAND-GRABBING AT A BANGLADESHI TEA PLANTATION." *State Crime Journal* 12, no. 1 (2023): 74.

3 Ibid, 74-75.

4 Al-Amin, Md., Md. Ismail Hossain, and Syeda Sultana Parveen. "Social Exclusion & Poverty among Tea Garden Workers in Bangladesh." *Indian Journal of Industrial Relations* 53, no. 1 (2017): 21.



Figure 2 Tea garden workers, Bangladesh

For tea garden communities, land has been a crucial element in the lives of tea laborers, serving as the most important resource for their social existence from the colonial period to the present. Over time, as tea plantations remained relatively isolated, some lands not used for tea cultivation were allocated to workers for growing crops¹. This change not only ensured the sustainability of laborer communities but also laid the foundation for the residents' subsistence livelihoods. The significance of land gradually shaped the spiritual and cultural aspects of their lives, as observed:

*“Our funeral ceremonies take place on the land. The land does not only provide crops that are required to survive, but it also is used for religious rituals. Therefore, our life cycle depends on the land—from birth to death.”*²

This history and collective memory within the tea plantation community created a common political language and also directly influenced the current situation of those tea garden community in Sylhet.

In the tea cultivation industry, there are approximately 300 million workers, with a notable majority of whom, around 75 percent, being female³. These laborers have been bonded to this land for generations, with limited opportunities to interact with people beyond their communities. Additionally, around 58 percent of tea workers are illiterate, and 60 percent could not attend school due to poverty. This lack of education hinders their ability to engage in alternative work opportunities. However, in the context of industrialization and urbanisation in Bangladesh, there is a notable shift towards urban living over rural residence, especially among young people⁴. The appeal of city life and employment appears to outweigh the continuation of their parents' farming traditions for those residents living in the tea garden communities.

¹ Khan, Ashrafuzzaman, and Kristian Lasslett. “WE WILL GIVE OUR BLOOD, BUT NOT OUR LAND!”—REPERTOIRES OF RESISTANCE AND STATE-ORGANIZED LAND-GRABBING AT A BANGLADESHI TEA PLANTATION.” *State Crime Journal* 12, no. 1 (2023):76-78.

² Ibid, 76.

³Al-Amin, Md., Md. Ismail Hossain, and Syeda Sultana Parveen. “Social Exclusion & Poverty among Tea Garden Workers in Bangladesh.” *Indian Journal of Industrial Relations* 53, no. 1 (2017): 21.

⁴ BEARNOT, EDWARD. “Bangladesh: A Labor Paradox.” *World Policy Journal* 30, no. 3 (2013): 90.



Figure 3 Female worker showing her skill of weaving



Figure 4 Old lady taking the household and baby caring work

PROBLEM STATEMENT

Challenges the elderly facing in tea garden communities with the demand of new housing system

The tea garden communities now face a complex array of contemporary problems that affect labor quality and living conditions. Over the years, tea workers have faced marginalization and exclusion from the outsiders, with little attention from the government and tea garden authorities¹. Therefore, they live in poverty which makes it challenging for them to secure a comfortable standard of living. To sustain themselves, workers have to balance both tea cultivation and crop farming, despite the demanding nature of tea garden work. Some female workers have acquired skills in weaving sarees and curtains to earn income. These workers lack access to proper education, healthcare, and other basic rights². Additionally, their geographical isolation from urban centers enlarges difficulties due to the absence of commercial activities and limited access to diverse goods and food resources.

It is observed that the elderly could mostly show the problems of living conditions in the tea garden communities. Typically lacking independent income sources, and with limited pension offerings from companies, the older generation often returns to their families, relying on their children for support. However, this does not mean that the elderly can rest and enjoy their retire life. The necessity for the middle-aged generation to work in tea gardens, together with gender issues assigning household responsibilities to women, making female elders in a central role in managing household works. Due to the lack of basic facilities, it will take a lot of effort for these old ladies to finish their household work. Meanwhile, they also need to take care of babies and children in their families, which is also a tough job.

¹ Al-Amin, Md., Md. Ismail Hossain, and Syeda Sultana Parveen. "Social Exclusion & Poverty among Tea Garden Workers in Bangladesh." *Indian Journal of Industrial Relations* 53, no. 1 (2017): 23.

² Ibid, 22.



Figure 5 Living condition for the elderly residents

Typically, laborers in the tea garden work until they are physically unable, leaving elderly retirees vulnerable to health challenges and mortality. In the context of the tea garden community, the combination of inadequate infrastructure and poverty makes life more challenging compared to urban areas. Due to prevailing poverty, most elderly people struggle to meet their dietary needs, potentially leading to health issues. Meanwhile, there are no medical services inside the community. If there is someone getting sick, he or she needs to go to the public hospital in the city far away from the community, which means that those elderly may encounter difficulties in accessing healthcare due to limited care facilities.

Based on those problems the elderly are facing, the condition of the infrastructure and housing system seem to become another factor that impacts their life condition negatively. Due to physical inconveniences, the elderly have very limited space for activities. They have to stay at their homes, even just their rooms, due to the limited indoor space and housing areas within the community. Moreover, the housing lacks design elements and facilities catering to physical inconveniences, such as ramps, to facilitate the movement of the elderly. Additionally, the use of limited construction materials and structure design results in houses that are excessively hot in summer and cold in winter, adversely affecting the health of the elderly.

Moreover, an increasing number of young people in the tea garden community display a preference that moving out to find urban employment opportunities and settle down due to the tendency of industrialization and urbanization process in Bangladesh. Consequently, the middle-aged population in the community is projected to age over time, potentially facing the challenge of inadequate care in their later years. Once the tea garden community become an aging community, the community itself could decline after generations. To ensure the sustainability of the community in the future, implementing a new housing system with a focus on accommodating the needs of the elderly could be a valuable solution.

Therefore, it can be stated that the elderly in tea garden communities face challenges in living within a conducive environment and lack adequate caring facilities. The implementation of a new housing system, designed with a focus on caring considerations, could prove beneficial for both the elderly individuals and the entire community.



Figure 6 Current housing condition in one tea garden community, Sylhet, Bangladesh

RESEARCH QUESTION

Affordable housing & Elderly residents & Potential demographic change

Given the challenges currently faced by elderly residents in the tea garden community and to ensure a sustainable future, there is a need for a new housing system model specifically considering the living conditions of the elderly, as well as improving the whole living environment for the community. To effectively deal with this problem, a comprehensive approach is needed, focusing on the well-being of the elderly and remaining affordable for residents contending with poverty in these labor communities. Meanwhile, due to the ongoing trend of young people moving to urban areas, tea garden communities may potentially transform into aging communities in the coming decades.

Based on the two factors of the remaining problem, the main question can be raised:

How can an affordable housing system prioritize the living conditions of the elderly, simultaneously remaining suitable and adaptable over the years for potential changes in demographic characteristics within these tea garden communities?

It is important to addressing this aspect for ensuring the long-term sustainability of these labor communities.



Figure 7 Housing condition in Lakkatura



Figure 8 Infrastructure condition in Lakkatura

SUB-QUESTIONS

Architectural factors & Practical examples & Social and cultural isolation

The research question can be broken down into several sub-questions, addressing both internal and external factors. For the internal factors, how can a new housing system deal with the contradiction between the lack of infrastructure and the elderly's, even the whole community's needs from an architecture view? In what ways can the housing system provide chances for the community to actively participate in shaping the living conditions to meet the evolving needs of its elderly residents? And, considering the external factors, how will the affordable housing system contend with the local environmental aspect and limited resources due to the lack of money, limited resources, and isolation from the urban area as a prerequisite? How can housing systems adapt to environmental changes and challenges while remaining cost-effective and suitable for the elderly?

Considering the potential changes on the demographic characteristics in these tea garden communities over the next few decades, it is essential to examine practical examples of elderly-friendly housing systems implemented in communities facing similar challenges. What are their strategies and methods to deal with the current or future shifts in population change of the long-term residents?

Furthermore, the current challenges faced by tea garden communities regarding poor living conditions are primarily rooted in isolation—historically, geographically, and culturally. While establishing new housing systems is essential for dealing with material and infrastructure issues, it is equally important to devise strategies that fundamentally building up connections between subcultural and mainstream communities, addressing social isolation. This aspect is integral to achieving sustainable development for tea garden communities.

1 Overview of Tea Garden Communities

- ▼ 1.1 History: Colonial time
 - ▼ Co-existence of Hindu & Muslim communities
 - ▶ Plantation immigration:
 - ▶ Hindu communities get along well with local Muslim communities, they are all parts of the tea garden neighbourhood.
 - ▼ Shaping the community order in history
 - ▼ Social connection with the land:
Land became the essential other of the tea labourers, which is the most important resource of their social existence.
 - ▶ a) The shift in land use:
 - ▶ b) Spiritual and cultural life with the land:
 - ▼ Influence on the community life:
 - ▶ a) Coolie festival:
 - ▶ b) Coolie line:
- ▼ 1.2 The general economic condition in Bangladesh
 - ▶ Agriculture: tea garden
 - ▼ Industrialisation and the changes in labour
 - ▶ Labour in Bangladesh
 - ▶ Industrialisation and urbanisation
- ▼ 1.3 Labour in the tea garden
 - ▶ Tea garden workers in colonial times
 - ▼ Recent condition of workers in tea garden communities
 - ▶ Tea garden worker
 - ▼ Problems tea garden workers face in general
Workers are deprived of getting proper education, healthcare and other basic rights.
 - ▶ a) Education and poverty
 - ▶ b) Sanitation and hygiene
 - ▶ c) Limited alternative employment opportunities

Figure 9 Framework of literature review

METHODOLOGY

Literature review & Case study & Field work

The research methodology serves as a comprehensive system to collect data from various aspects, forming the theoretical framework for the entire research and providing a foundation for the design. Initially, the methodology is concentrating on exploring the background of labor and tea garden communities in Bangladesh, focusing on historical, cultural, societal, and economic dimensions. Subsequently, practical experiences related to affordable housing, elderly-friendly housing, and traditional housing in the South Asian region are analyzed and incorporated. Crucially, data about the site conditions and the target group are gathered through active participation in the specific local environment during a field trip.

Literature review

To establish an overall understanding of the local environment, the city, and the community, the prior approach was referring to various literature sources. Books, academic journals, newspapers, and web pages were reviewed to gather insights into the labor and economic conditions, as well as the social, cultural, and historical background of the tea garden and its communities from the colonial period. During this process, the social and cultural characteristics of the tea garden communities and tea workers were clarified and defined. Meanwhile, the current trends, challenges, and advancements in related fields were identified, showing the potential directions that this research will pursue.

By contextualizing the research problem, the information has built a knowledge base, laying the background for the ongoing analysis and design phases of the research. Furthermore, the literature review has laid the foundation for the theoretical framework of this research.

The whole literature review is under the framework shown left side.

Case study

The case study analysis will serve as one part of references for reviewing the previous practical experience about affordable housing and elderly-friendly housing all over the world, together with traditional housing types in Bangladesh. Through a comprehensive analysis of these cases, it will be figured out the ways to deal with some similar situations. Results of the analysis will be presented through drawings, diagrams, and discussions on design logics. Meanwhile, the design methods from projects focusing on similar topics and target groups will be compared to identify commonalities and differences.

This study aims to conclude design methods for developing a suitable housing system for labor communities, with a specific focus on the needs of the elderly, and finally contributing to an architectural database for this research.

Field work

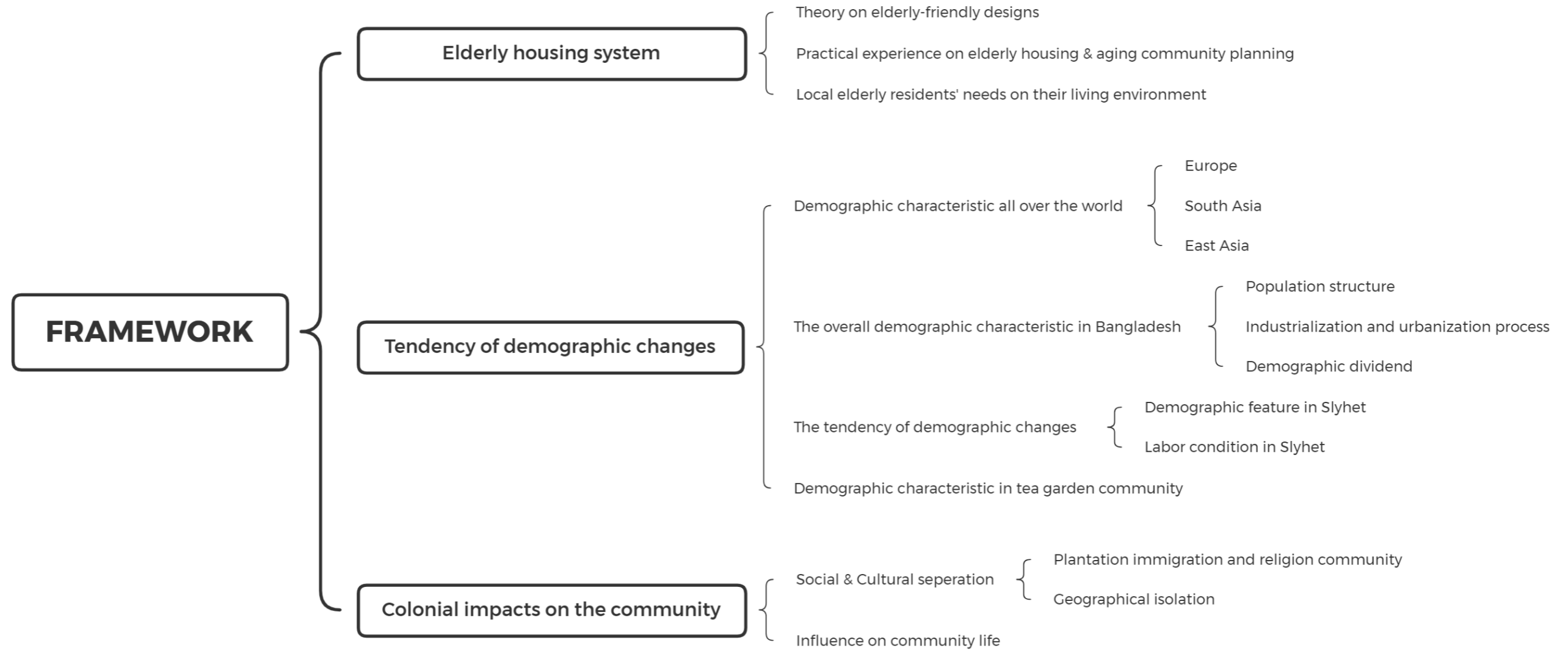
The field work could be seen as the most important part of the whole methodology session. It comprises three integral parts: a field trip involving observation and interviews, site analysis, and mapping. These three parts could together form up a three-dimensional understanding of the site and target group.

During the field trip, the Lakkatura tea garden was identified as the site, representing a typical labor community facing significant challenges in living conditions for the elderly and the potential risk of the younger generation relocating to urban areas. Observation and recording works were completed during the process of field trip, under the media of photos, videos and recordings, which could directly show the current situation of community environment and the overall life quality here. Special attention was given to recording and interviewing the elderly residents to understand their living conditions.

The site analysis will primarily focus on the characteristics related to geographical isolation, potential influences from the climate feature and changes, and the basic layout and built environment conditions of this community. This systematic site analysis will mainly address the external factors that could influence the design methods, including the potential concepts of layout, structures and materials.

In the mapping phase, it will point towards the internal factors within the Lakkatura tea garden community. This aims to create an activity map illustrating the patterns of the elderly residents and the overall local residents, in order to identify the communal order of daily routines and private space needs. Additionally, the mapping process will include social and cultural characteristics, recognizing their significant influence on the activity patterns within the community.

THEORETICAL FRAMEWORK



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