Disaster Diplomacy:
The spatial impact of international reconstruction aid in the aftermath of the 2015 Gorkha earthquake in Nepal

by
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Abstract

This thesis aims to investigate the spatial implications of international reconstruction aid in the aftermath of the 2015 earthquake of Nepal, particularly in the urban municipality of Lalitpur.
I explore how emergency reconstruction aid, operationalized as support from international NGOs, bilateral agencies and multilateral organizations, has a spatial impact and imprint on cities. Particularly, I examine the impact of the aid community on the rent, land values, and infrastructural/amenity distribution within the wards of their operation. Second, I examine the impact of post-earthquake reconstruction projects leveraging international funding on urbanization patterns in the wards in which they are situated. To understand counterfactual trends, I examine the overall patterns of neighborhood externalities in earthquake affected wards of Lalitpur where no international aid funded projects or aid personnel are located.
The argument advanced includes two suppositions that decipher the spatial implications of aid project presence and operational presence: 1) The increasing spatial cluster of physical outposts of international aid organizations' headquarters, i.e. what I call here their operational presence, creates negative neighborhood externalities ad change that is privileging the rentier class rather than distributing housing, amenities, and infrastructure equitably to the city; 2) The presence of international aid funded reconstruction projects, i.e their project presence, creates a change in both amenities and small business distribution within wards within which they are situated to create neighborhood change, which accelerates inequity, but in ways unlike that of operational presence. I find that two wards within Lalitpur show significant negative neighborhood externality and change due to the presence of international reconstruction aid as opposed to the rest of the municipality i.e. Ward no.2 and Ward no.16.
Particularly, these wards saw an exponential increase in rent and housing values (in the case of Ward no.2), a change in the nature and function of locally owned small businesses, and a tendency to cater to a rentier class that comprises international aid workers and tourists, as opposed to the rest of the municipality (both Ward no.2 and Ward no.16).

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I would like to thank my hosts, my close friends, and coworkers in Kathmandu for extending their support to me over five years; beginning from my first visit to Nepal in 2018 to my latest visit in 2023 and what will likely be a lifelong association. To my employers – Kai Weise, Anie Joshi and all the staff of Himalayan Consulting Architects and Engineers who graciously gave me the opportunity to work in their country and invited me to their homes. I would like to extend my thanks to Kriti Shrestha, who has been an unwavering friend from the first time we met as fellow architects in Nepal to now. A word of thanks to Shreetish Shrestha and his entire family, who became a host family for me for the duration of time that I was in Nepal and accepted me as their own. I would also like to acknowledge the support of all the municipal, local and ward authorities of Lalitpur who offered their support, and the kind folks from HRRP, Lumanti, Government of Nepal, Tribhuvan University, Lalitpur EBPS, USAID, KVDA, SWC Lalitpur and my various hostels who provided data and advice on my research. A heartfelt thanks to all the people of Ward 2, 16 and 26 of Lalitpur who answered my survey questionnaire and offered *chia* and support to an Indian woman who did not speak their language very well!

From MIT, I would like to thank my thesis advisor and very patient mentor Professor Gabriella Carolini, for paving the path of my thesis and for provoking the first intellectual proposition on the impact and imprint of aid on Global South cities with her own research. I would additionally like to thank my readers Professors Mary Anne Ocampo and Lawrence Vale, who helped me achieve clarity regarding my research questions and provided guidance along the process. I thank Professor Bishwapriya Sanyal, who connected me to the relevant stakeholders and to my future employers.

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Positionality and Motivation

In 2018, I worked in the immediate aftermath of the earthquake as a junior architect on the post-earthquake reconstruction of the Kathmandu Durbar Square. I had an outsider's perspective on the reconstruction efforts, while being present in the country at a time of rising geopolitical tension between the neighboring countries. The time from 2018 -2020 was a time of rising nationalist fervor in Nepal and increasing scrutiny and suspicion for the work conducted by international organizations within the country by local and civil society groups. In addition, from 2018-2022, the urban neighborhood within which I lived for a year as an expat, namely Sanepa, seemed to have completely changed to accommodate the pressures of the operational presence of multiple international NGOs and expats living within the area. In addition, echoes of increasing housing prices and subsequent gentrification continued to be a part of dinner table conversations, tangentially linked to the proliferation of aid agencies. The motivations of donor organizations and the willingness to privilege certain high income and high caste demographic groups was alluded to. In addition, recent literature laid claims of rising gentrification in heritage settlements within urban areas (Bajracharya, n.d.; Haselberger and Krist 2020)

Having been privy to these conversations between friends within the international aid community, and witnessing the proliferation of billboards proclaiming the welfare generated by international agencies in the development of Nepal, I wanted to understand if there was merit behind the locally held sentiment of "international creep" or the crowding-in effect of aid and its future implications.

1. Introduction

a. The earthquake of 2015 in Nepal:

On April 25th, 2015, a 7.8 magnitude earthquake struck Nepal, followed by a 7.3 magnitude aftershock on May 12nd, 2015. More than 800,000 homes were destroyed and more than 288,000 were damaged in the 14 worst-hit districts (Global Shelter Cluster, 2019). A Post Disaster Needs Assessment determined that economic loss due to the earthquake was one third of the country's GDP. Major sectors affected by the earthquake included housing, heritage, and tourism (GoN, 2015). The impact of the earthquake was exacerbated by a trade embargo and border closure by India in the months after the earthquake, which further hindered reconstruction. Since 2015 (after the earthquake), and as evaluated in 2020 (when the report was published), the Government of Nepal has achieved only 44% success in the reconstruction of affected sectors (government offices, heritage sites, etc.). Around 43% of progress was achieved for the reconstruction of private houses (NPC, GoN, 2015).

i. Impact and response of the international aid community post the earthquake:

Earthquake impact was felt most acutely in the 14 municipalities of Gorkha, Sindhupalchowk, Kavrepalanchok, Nuwakot, Kathmandu, Lalitpur, Rasuwa and others. Damages included those to housing, infrastructure such as roads and bridges, public buildings and educational structures. Of the households experiencing damages to their homes within the Village Development Committees (VDCs), as assessed by the Nepal Shelter Cluster (i.e., a coalition of humanitarian aid organizations formed in response to the earthquake), 92% owned their houses and the land on which they were built. Only in the urban areas of Kathmandu and Lalitpur was the proportion of rented homes slightly higher than the national average at 19% (Shelter Cluster, 2015). As a result, the Nepal Shelter Cluster designated those without rent or housing security as one of the most vulnerable groups affected by the disaster. Invariably, this meant that urban areas were considered to be areas where the most vulnerable populations resided, as most rental units are located in urban locations.

Of the 14 municipalities with significant earthquake damage, urban areas in Kathmandu and Lalitpur were notable because they suffered damages in wards such as heritage squares of Kathmandu Durbar Square and Patan Durbar Square, and their surrounding areas which are primarily wood and brick structures. However, even though 25% of all damaged structures were located in urban areas of Kathmandu and Lalitpur, urban areas were largely overlooked in the immediate international humanitarian response (Shelter Cluster, 2015), due to lack of funding, lack of clarity about land and property rights, and inefficiencies in interacting with administrative bodies at the time of the disaster (Sharma,2023).

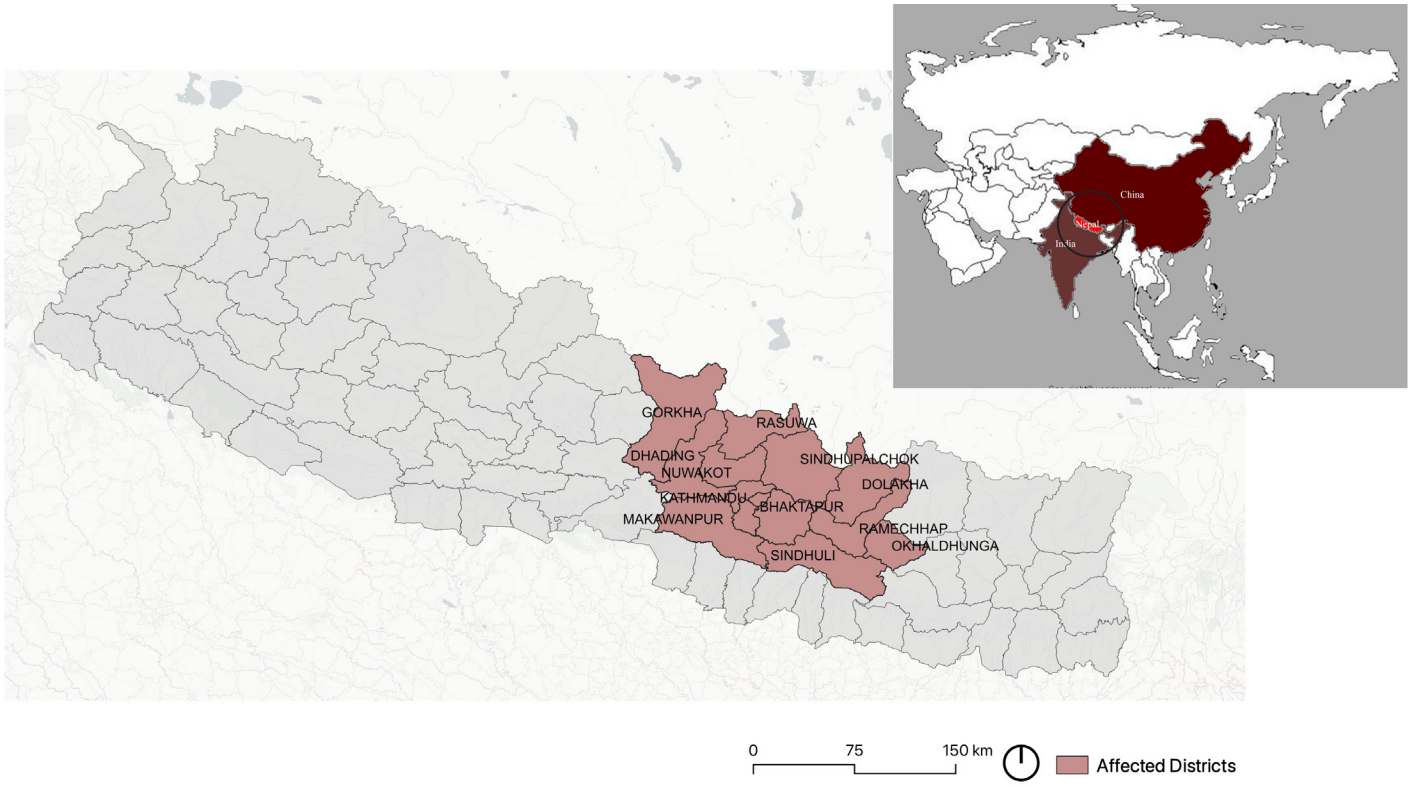


Figure 3: Affected areas include areas where there has been a damage to structures, physical infrastructure, and roads | Situation Report, Nepal Shelter Cluster, November 2015

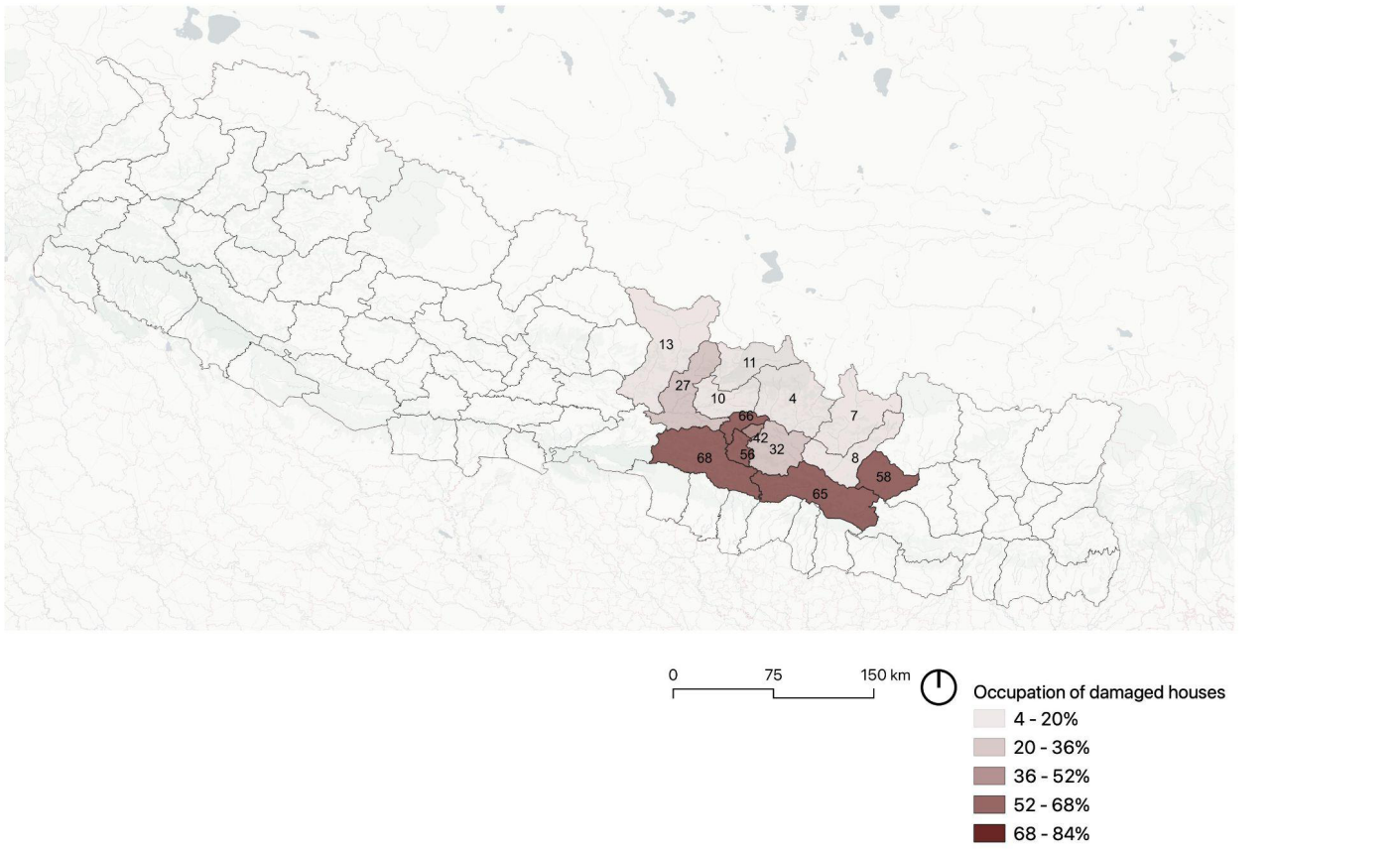


Figure 4: Occupation of damaged houses by residents after the earthquake, Situation Report, Nepal Shelter Cluster, November 2015

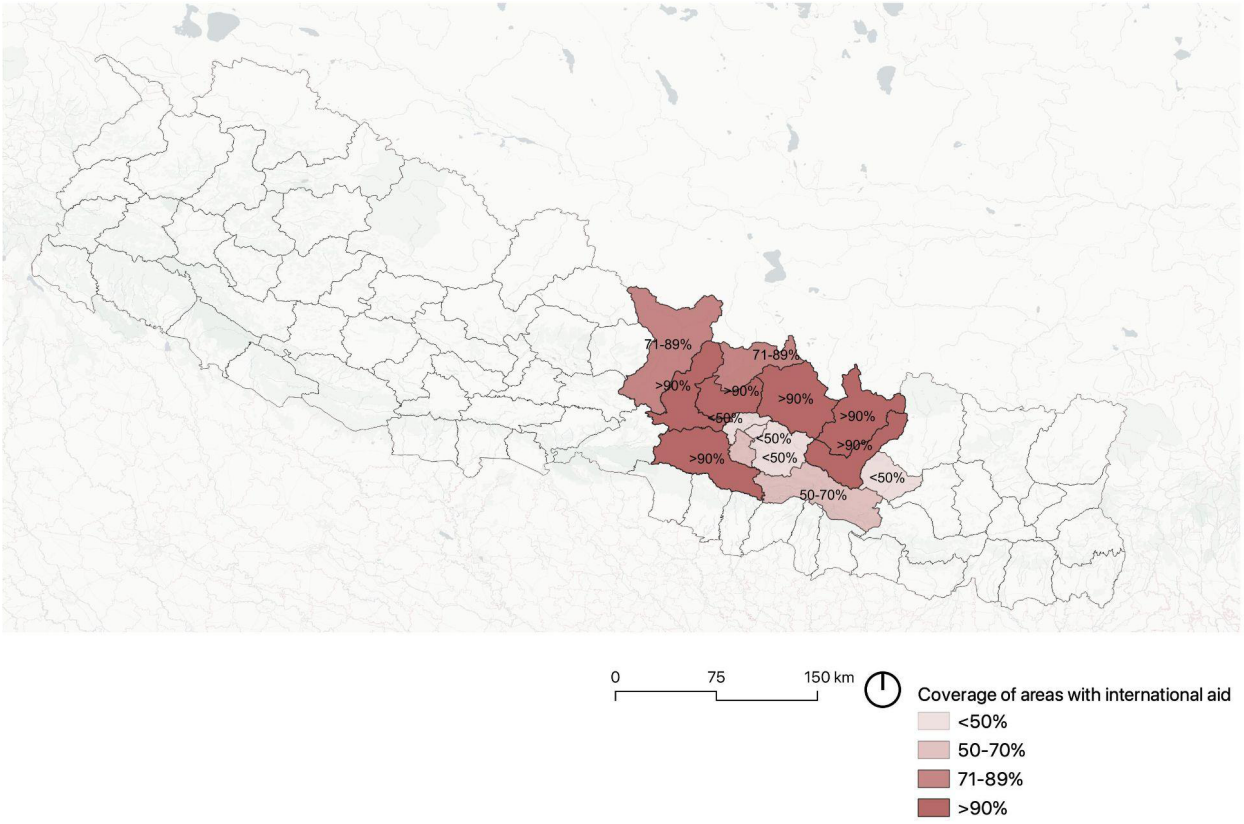


Figure 5: Coverage of areas by international aid |Shelter Cluster Factsheet, November 2015

Nonetheless, even though urban areas were overlooked as project site locations in the immediate aftermath of the earthquake, the operational presence of INGOs and humanitarian groups increased exponentially in urban areas for a range of up to 5 years after the 2015 event (Malik Sanjay, 2023).

According to the regulatory body governing all International non-governmental organizations (INGOs) and local non-governmental organizations (NGOs) in Nepal, the Social Welfare Council (SWC), in addition, there were 17 new INGOs that started operating in Kathmandu and Lalitpur post the 2015 earthquake, out of which 10 remained by 2017 (See below). Several INGOs in the country altered their existing operations to cater to the pressing needs of earthquake response, such as Adventist Development and Relief Agency, Action Aid and others. As the years progressed, the number of NGOs and INGOs focused on disaster response, particularly pertaining to the 2015 earthquake, decreased by 2019-2020, and switched their focus to covid response.

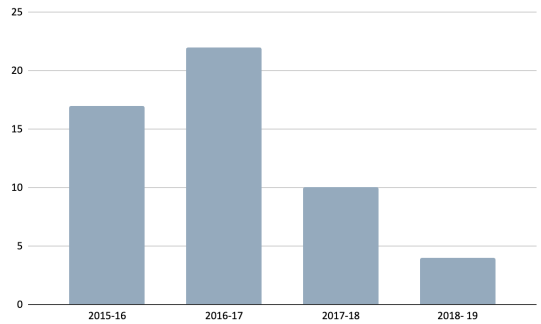
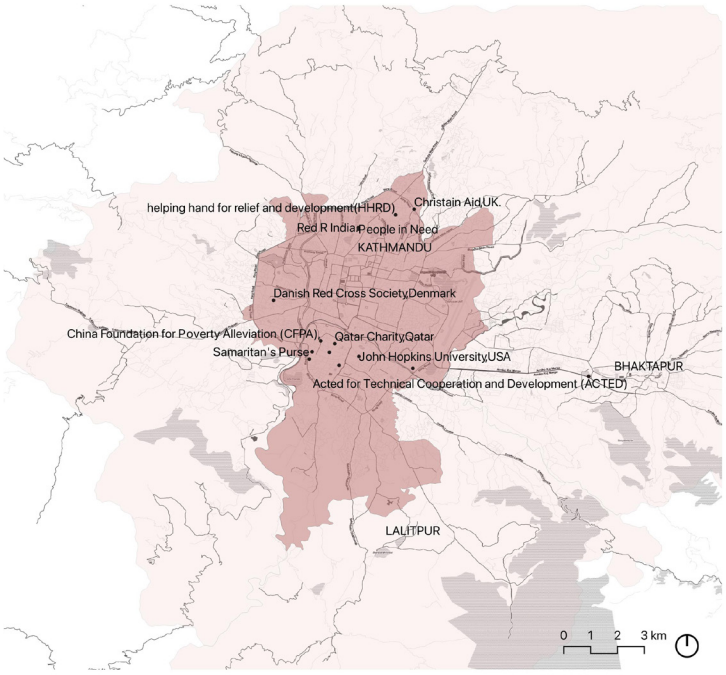
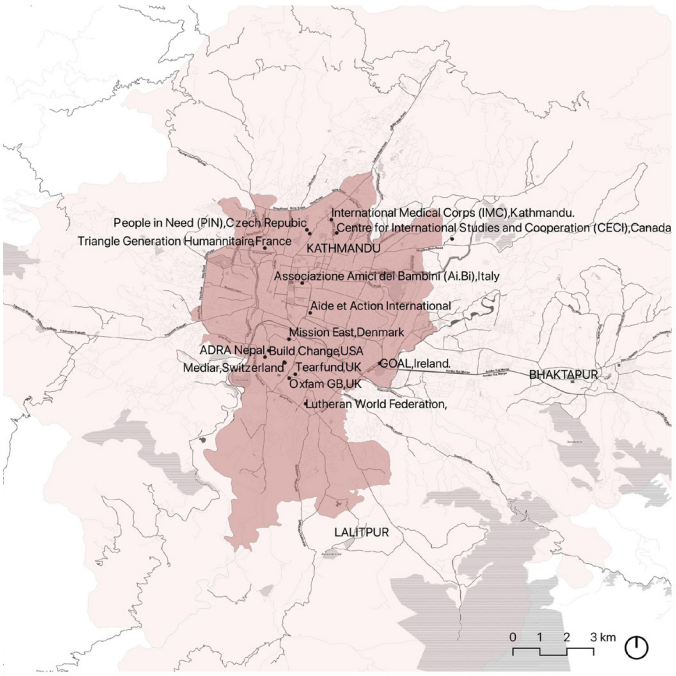


Figure 6: Total number of INGOs working on post earthquake reconstruction or disaster response after the 2015 earthquake, SWC| 2014-22





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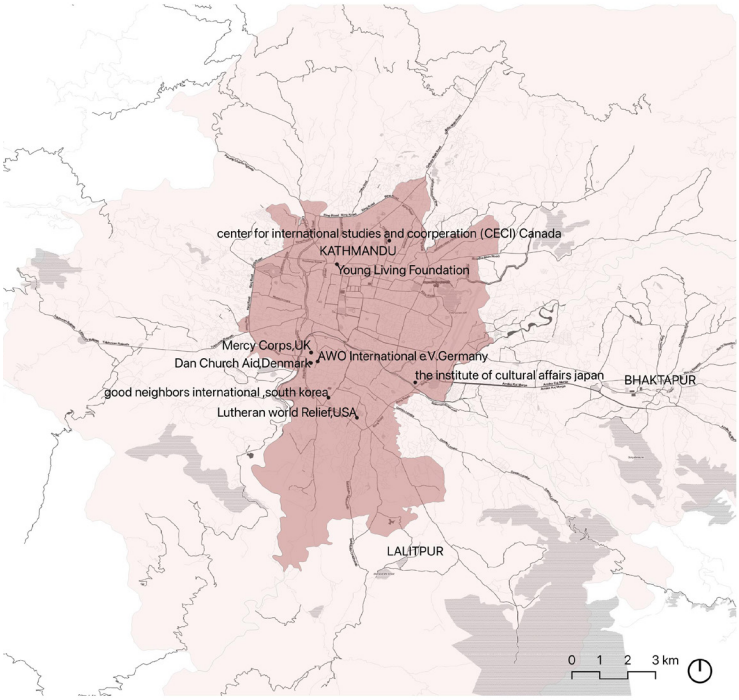

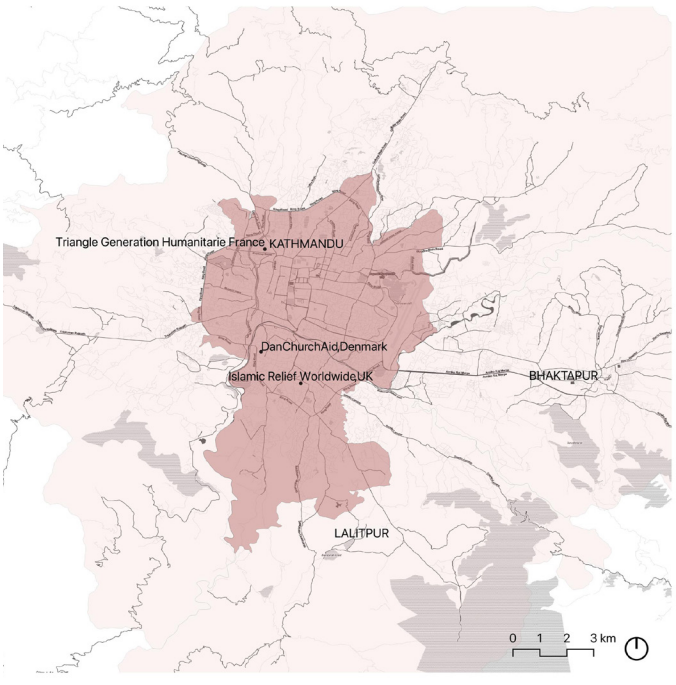

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b. Hypothesis

This thesis hypothesizes that reconstruction aid post the earthquake of 2015 led to an agglomeration or clustering of both operational presence of aid workers and project presence (and benefits) in certain urban wards, which led to intra urban changes in ward neighborhoods, creating pressures on rents, infrastructure, and access to amenities within Lalitpur which had not previously existed. Here Lalitpur was chosen as a case study due to the dynamic nature of the emerging intra ward inequities within this urban municipality. A counterfactual study will be used to study if this hypothesis holds true in comparable wards, and the spatial impact and extent of this change across neighborhoods in Lalitpur particularly.

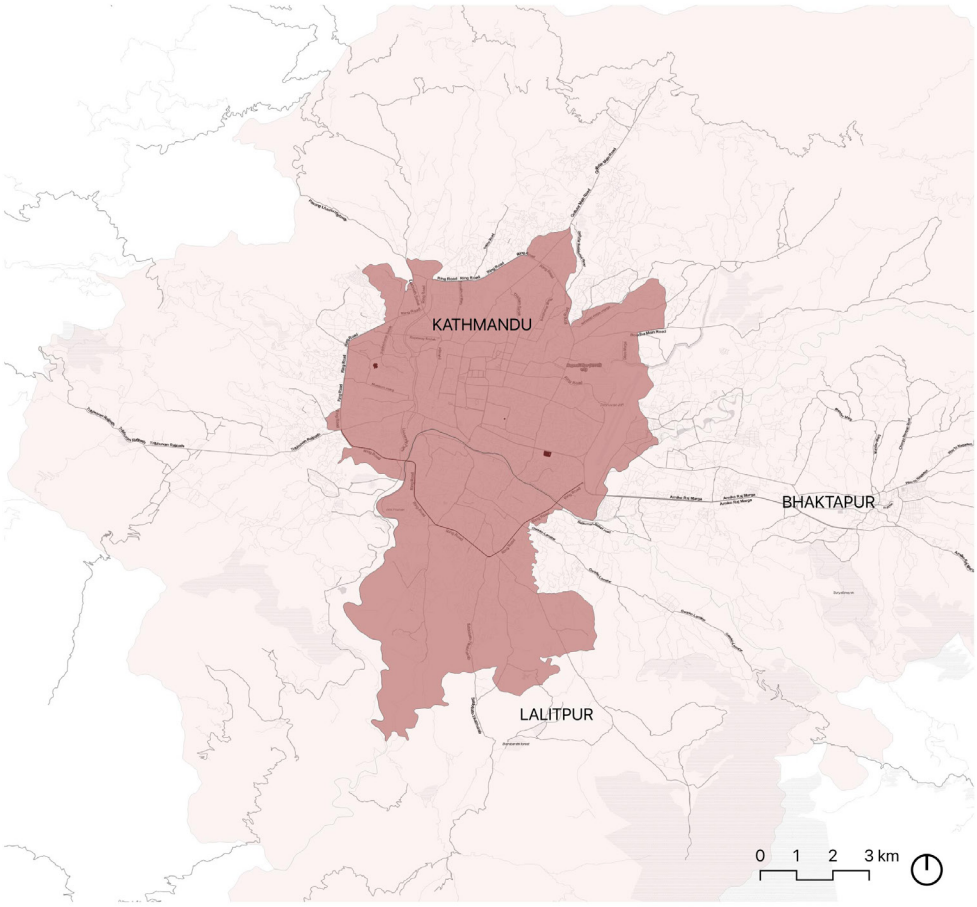

Figure 11: 7 Infrastructure projects were initiated by China in Kathmandu and Lalitpur as part of the Belt Road Initiative | William and Mary, 2022

2. Aid architecture in Nepal:

a. The trajectories of aid from 1900s - 2015:

Nepal is a landlocked country with a heavy aid dependence on its neighbors, particularly India and China. Additionally, Nepal accepts aid in the form of loans, grants, and transfers from multilateral development banks, bilateral agencies, private sector donors, multi donor trust funds, international NGOs etc. Historically, Nepal was under a monarchical rule that isolated itself from accepting foreign aid by enacting a number of isolationist monetary policies. It was only in 1947 that the first US embassy was inaugurated on Nepali soil, and aid relations were formally enacted. Between the 1950s and 1970s, foreign aid financed about 95 percent of the government expenditures, although aid inflow to Nepal and the nature of projects funded by bilateral donors varied with the intensity of cold war ("Aid, Policy, and Growth: The Case of Nepal"

n.d.). Currently about 60% of the country's economy is financed by leveraging international aid. Along with the high aid dependence, it remains a Least Developed Country (LDC) with an average per capita income of $540. Furthermore, Nepal only became a democracy in 2008, and the governance structure was considered fragile by the time the earthquake hit. During the time of the earthquake, Nepal was undergoing administrative and governance flux, and was underprepared to deal with the intensity of the natural disaster to come (Kadariya, Parikshit, 2023; Pokhrel Anil, 2023).

Natural disasters and Nepal

Major natural disasters typically precipitate a sharp increase in international assistance. Official Development Aid (ODA) typically increases significantly relative to pre-disaster flows (i.e. median aid flows increase by 18% after disasters) (Becerra, Cavallo, Noy, 2014), which can be seen in the case of Nepal. Nepal has received ODA in the form of loans, grants, and technical assistance since the 1950s. Over the years, grants have declined significantly, and loans have increased increasing debts for Nepal (Chaudhary, 2019). From FY 2010/11 to 2018/19, the flow of ODA remained consistent in Nepal, with a sudden influx of ODA in 2015, which can be attributed to the earthquake. The ODA disbursed to Nepal post-earthquake exceeded a billion-mark reaching 1.2 billion USD (IECCD, MOF, 2019; World Bank, 2020b).

Every major earthquake in the past century in Nepal has seen a correlation of an increase in international donor aid post disaster. It was particularly after the 1934 Nepal-Bihar Earthquake (the last major earthquake before the one in 2015, which killed around 10,700 people), that the isolationist Rana government of Nepal was compelled to accept international aid from its neighbors, particularly India and China, and the British Colonial powers at the time (Dhungel, 2015, p. 63). Since then, the magnitude of international humanitarian aid has only increased exponentially in response to the nature of the calamity and of course because of the growing volume of aid and aid organizations over the course of the 20th century. The humanitarian aid received after the 2021 upper Kosi glacial floods was $25 million ("Most Aid Funds Go to Just a Few Disasters. What about the Rest?" 2022), within only a couple of months post disaster. As compared to the $15 million in funding provided by the Emergency Response Fund in 2015, this indicates an sharp increase in aid acceptance by Nepal and the opening of extant barriers to donor aid (UN OCHA, 2015).

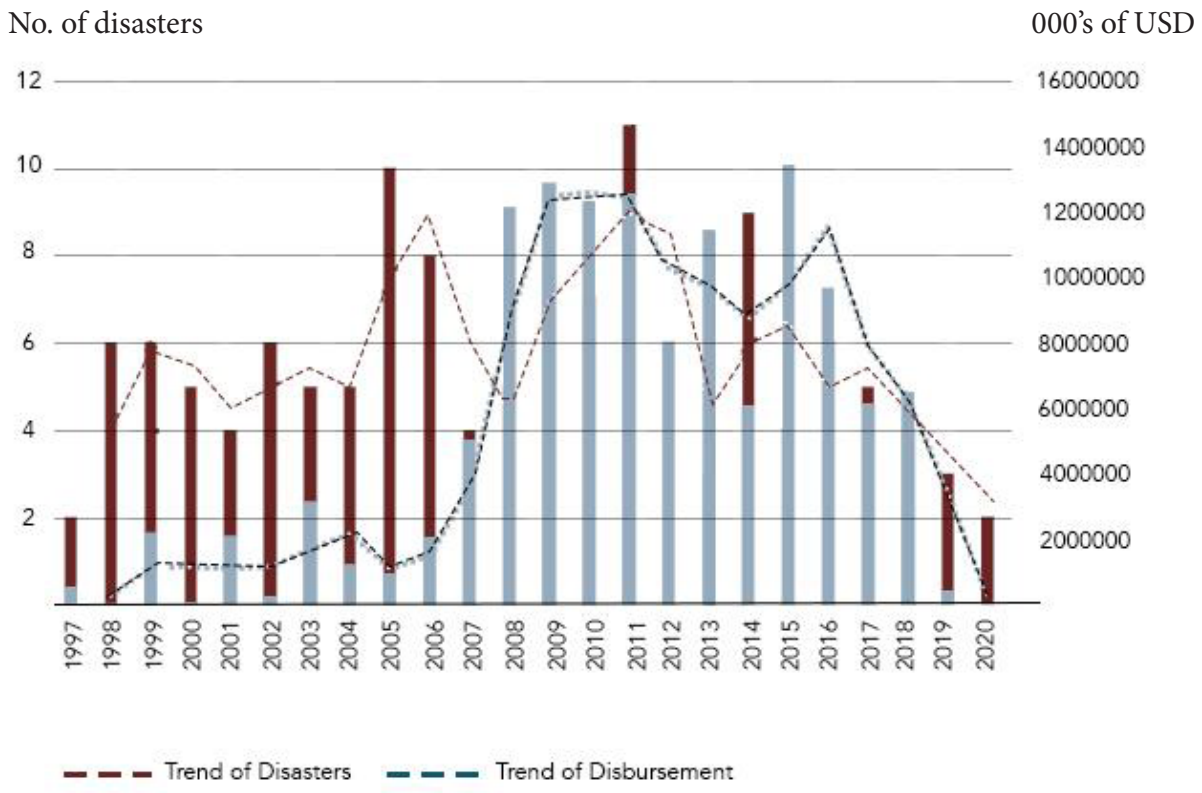

Figure 12: The contribution of external aid in Nepal in response to natural disasters, along with the rate of natural disasters in Nepal, readapted from Chaudhary's 2019 paper on aid absorption in Nepal | Chaudhary, 2019

b. Aid agencies operating in Nepal

In 1992, the Social Welfare Council (SWC) was created by the Government of Nepal to regulate the large inflow of INGO development aid and presence within the country. In addition, the SWC also regulates the role and operations of local NGOs and civil society organizations within the country. This regulation includes reading requests for proposals, analyzing the financial and institutional capacity of each NGO, the scope of the project and their needs. In addition, for the length of the project, the SWC monitors and evaluates the efficacy of the project. The SWC however does not map the operational presence of personnel on the ground in Nepal (Bhattarai Ramraj, 2023). It must be noted that the SWC does not make a distinction between humanitarian and development aid to the country. At the most, the SWC allows NGO presence for 5 years within the country for long term projects and 3 years for short term projects (renewable as needed). The humanitarian aid received in the aftermath of the disaster would be classified as a short-term development project (Malik Sanjay, 2023). The SWC therefore maintains that most earthquake reconstruction projects should be phased out within 3-8 years of operation, or be incorporated into existing development agendas.

It is thus not surprising that the number of INGOs has increased and decreased after the 2015 earthquake and post covid. There were 232 operational INGOs in Nepal before the earthquake, which rose to 250 post the earthquake, and down to 206 after covid. This trend is a result of a loss of donor funding and interest after the pressures of the covid pandemic, as per Sanjay Malik of the SWC.

If the long-term agenda of development actors and that of the government is to ensure a short-term operational presence, it seems counterintuitive that the presence of aid actors would increase along with an increase

in Nepal's GDP. However, an increase in the number of local NGOs has been significant since the 2015 earthquake, and the trend of year on year growth of NGOs is seemingly linear (Social Welfare Council,2022). A majority of the NGOs and INGOs across Nepal are concentrated in Kathmandu and Lalitpur, and this thesis therefore further delves into their operational presence within Lalitpur.

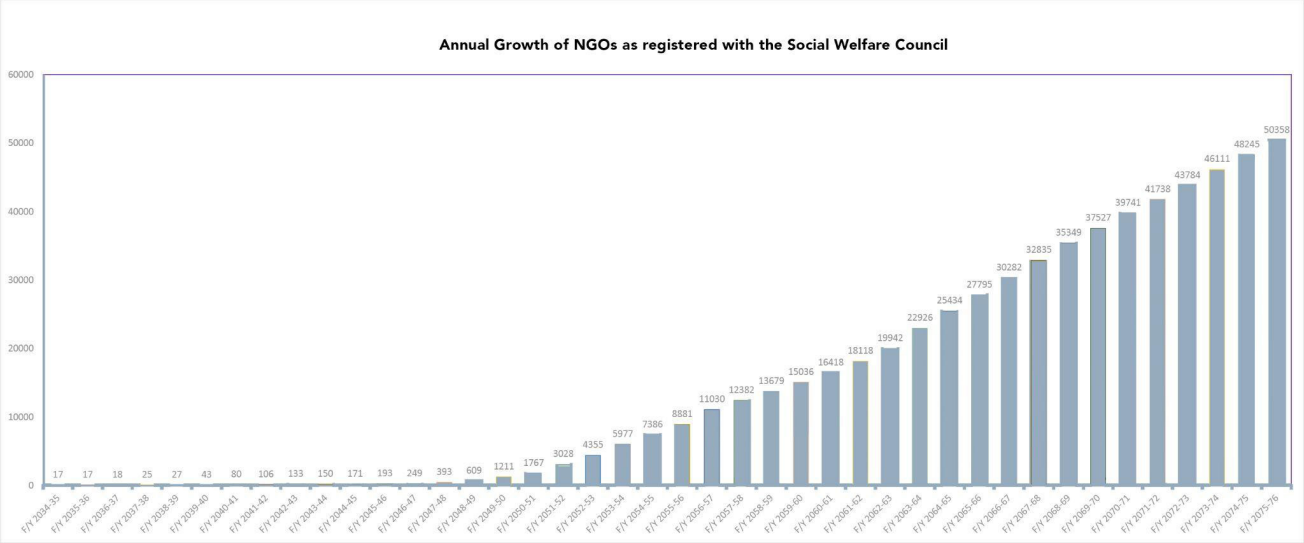

Figure 13: Increase in the number of NGOs registered with the Social Welfare Council| Social Welfare Council, 2023

c. International aid post the 2015 Earthquake:

In the universe of humanitarian aid, a post disaster situation warrants a response that is different from the regular development aid operations within the country. For disasters of the scale of the Nepal earthquake, the humanitarian community mobilizes with the support of UN Office for the Coordination of Humanitarian Affairs to create a cluster response for humanitarian aid ("The Sphere Handbook | Standards for Quality Humanitarian Response", 2018.). The humanitarian Shelter Cluster is mobilized particularly for reconstruction efforts for resettlement and shelter provision. The 2015 Nepal Shelter Cluster, co-led by the Department of Urban Development and Building Construction (DUDBC), the International Federation of the Red Cross (IFRC) and Nepal Red Cross Society (NRCS), was composed of over 120 partner agencies involved in shelter interventions, and was convened within a month of the disaster. Several UN agencies, including UN Habitat, UN Office for Project Services (UNOPS) and UN Office for Disaster Risk Reduction (UNDRR) provided capacity building support to the Government of Nepal to set up their nationwide disaster management response.

In addition, immediate bilateral humanitarian assistance was offered by mainly India, China, Australia, Israel, and others, amounting to almost $4.1 billion in relief efforts. Bilateral and multilateral organizations became the thrust of the reconstruction process, and several countries such as India and China became the top donors for affected sectors (World Vision, 2018). Local non-governmental organizations (NGOs) used their extensive networks to provide critical information to the military and humanitarian actors, primarily mobilizing international aid.

In December 2015 Shelter Cluster Nepal handed over the responsibility for coordinating the recovery of affected districts to the Housing Recovery and Reconstruction Platform - Nepal (HRRP), which was co-sponsored by the UN Habitat and the Government of Nepal. Presently, the HRRP continues to work on post disaster mapping of partner organizations and their efforts across the country using interactive dashboards and mapping applications.

d. Aid regulation post the earthquake:

To manage the scale of the disaster, immediately after the earthquake the National Planning Commission (NPC) of Nepal conducted a Post Disaster Needs Assessment (also aided by a consortium of the European Union (EU), World Bank, United Nations Development Program (UNDP), Asian Development Bank (ADB), and Japan International Cooperation Agency (JICA)) based on which an initial financial needs assessment was calculated. Then, Nepal appealed to the international community for financial assistance, leading to a donor conference in which more than USD 4.1 billion was pledged (NRA 2016). In spite of a history of natural disasters, Nepal at that time had no comparable National Disaster Management agency in place to handle a disaster of this scale. In December 2015, Nepal established the National Reconstruction Authority (NRA) to lead recovery and reconstruction, with a mandate to complete the work and handover to the National Disaster Risk Reduction and Management Authority (a modified NRA for extended long term and oncoming risks) in five year's time (i.e, 2020) ("Managing Post Disaster Reconstruction after the 2015 Gorkha, Nepal Earthquake and Lessons Learned", n.d.).

Additionally, a few months after the earthquake, there was a constitutional shift within the administrative system of Nepal. Remnants of a monarchical system, the country was divided into semi-autonomous village development committees, which were answerable to the central government. After the new constitution of Nepal was released, shortly after the earthquake, there was a push towards creating a three-tier system of federal, provincial and local governments. Over the course of the post disaster response, tangentially, there was also an administrative overhaul where several village development committees were decentralized into local government units called 'wards'. Multiple wards formed a municipality or a *mahanagarpalika*, which disaggregated into districts and provinces, headed by an elected official of the democratic government("Opinion | Improve the Wards", n.d.).

As per Parikshit Kadariya of the government of Nepal and Yatra Sharma, an urban planner employed by a local NGO, Lumanti, this administrative transition had two major effects on the post-earthquake response by local and international NGOs: 1)NGOs did not have a stable government authority that they could coordinate with post the earthquake; and 2) They could not identify a single area or physical unit of operations that they would be limited to work within.

Local NGOs chose therefore to work in areas where they already had established community ties and operational presence (Sharma Lumanti 2023). INGOs were guided by similar motivations, and further by donor interests. Therefore, there were no formal regulatory mechanisms for diverting resources and funding in the immediate aftermath of the earthquake, and INGOs and NGOs had autonomy in deciding their location of operation through mutual coordination, especially up until the NRA was formed.

Regulatory Institutions and areas of operation in post-2015 earthquake reconstruction:

The National Reconstruction Authority, post its establishment, remained the apex national body with which the Social Welfare Council, and municipalities coordinated.

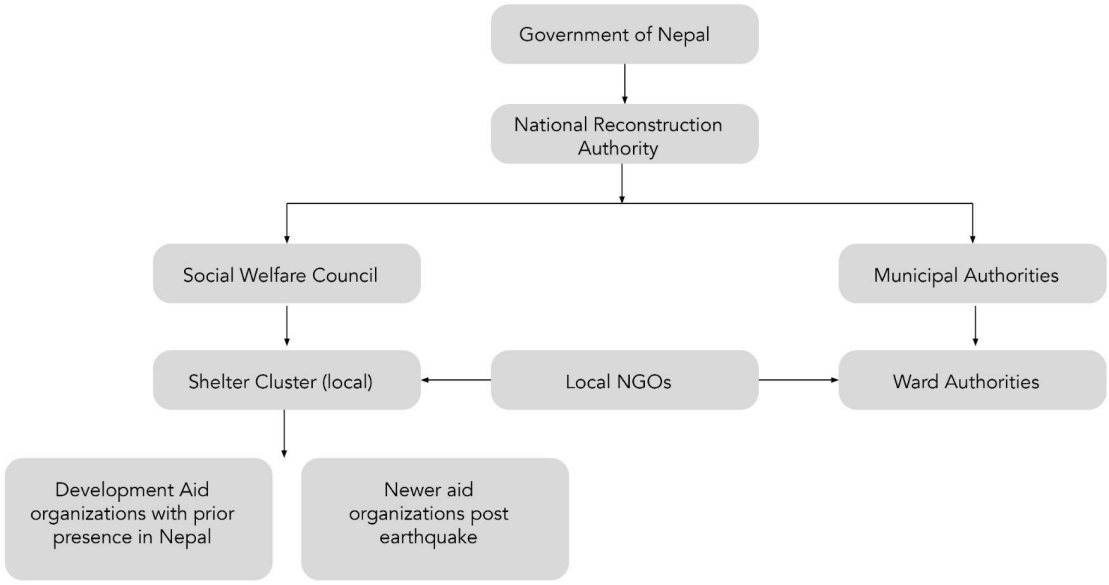

Figure 14: The structure of aid distribution in Nepal after the earthquake of 2015

e. Post-Earthquake Aid: Local Implications:

Eisenhauer, Fuchs, Kunze and Stroble (2019) argue that the distribution of aid in Kathmandu post the 2015 earthquake privileged neighborhoods dominated by higher castes and higher median incomes and disproportionately disadvantaged lower castes and lower income groups who lived further away from the capital (Eisenhauer, P., Fuchs, A., Kunze, M., & Strobl, E. ,2019). Several local NGO workers who chose to remain anonymous for this interview pointed out that ease of operations (accessibility, visibility, and networks of support) for international organizations and donor motivations led to certain areas being privileged over the others for receiving aid for post-earthquake reconstruction. World Heritage Sites in Kathmandu, Bhaktapur and Lalitpur were privileged by UNESCO and other allied agencies for reconstruction support, but restricted support to the perimeter of these sites only (Shakya Nirmal, 2023).In rural areas, where the terrain created barriers of access in reaching remote locations, governments and local NGOs had to undertake a bulk of operations when international NGOs refused to extend aid (Sharma Yatra 2023). As per the Shelter Cluster's own Nepal Recovery Monitoring and Assessment of their activities and of 308 partner organizations published in December 2015, barriers to certain areas in the priority districts for repair and rebuild were reported as lack of funds (97%), lack of skilled labor (38%), lack of materials (39%) and lack of knowledge (25%) (Shelter Cluster, 2017).

As per Lumanti Joshi, chief urban planner for the local NGO Lumanti and Yatra; urban areas remained largely untouched by international NGOs and bilateral and multilateral organizations due to the difficulty in ascertaining property and land rights in the area, and the lack of administrative capacity to intervene in urban areas, even though the impact of the earthquake was equally borne by them (Sharma Lumanti 2023; Kadariya, Parikshit 2023; Sharma Yatra 2023; Lama Sonam 2023).

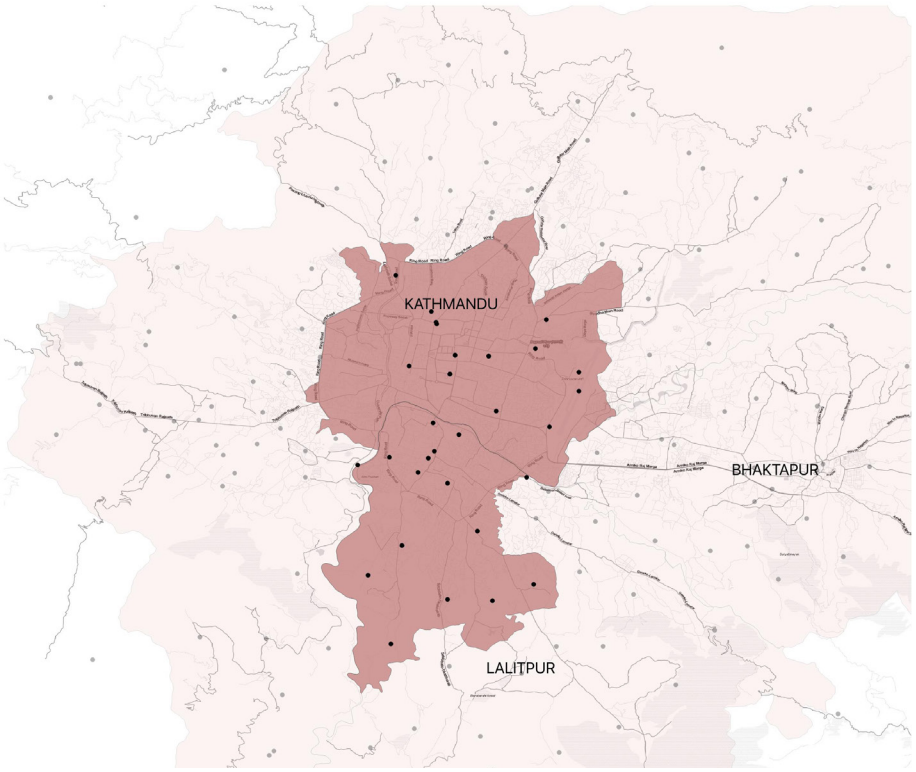

Figure 15: Distribution of international aid projects across Nepal in 2014 (Pre-earthquake) | AidData, 2015

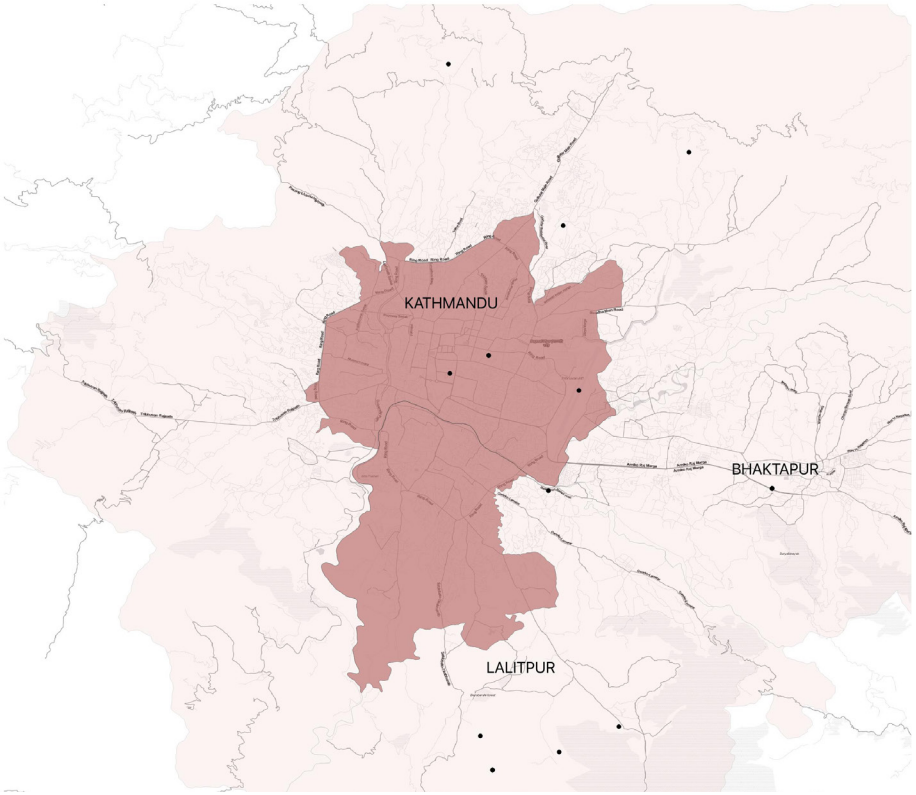

Figure 16: Distribution of international aid projects across Nepal in the 2015 UN Flash Appeals | AidData, 2015

3. The urban footprint of foreign aid

Trajectories of neighborhood change in South Asia and Nepal

In order to understand neighborhood change in the post-earthquake moment, I sought to first outline the existing landscape across Nepal and its cities. More specifically, Nepal's demographic transformation is a result of an agglomeration of a fast-growing urbanization in the Kathmandu Valley, along the Nepal - India border, and along the main highways. The rate of urbanization in Kathmandu is almost 6.5%, which makes it one of the fastest urbanizing cities in South Asia (Timsina et al. 2020). Migration is a powerful force of urban change, the net inflow of migrants within urban areas far outstrips the net outflow to rural areas, while the pursuit of economic opportunities as a reason for migration far outstrips lifetime migration (World Bank, 2013). Urban infrastructure, on the other hand, remained inadequate for the influx of population even before the earthquake. Urban development before the earthquake was haphazard and uncontrolled, and in several cases bordered on substandard and inaccessible housing development. Prior to the earthquake, it was one of the most earthquake vulnerable cities in the world (World Bank, 2013). Urban planning in Kathmandu was responding to this increasing mass migration into the city, and there is reason to believe that this urbanization would have led to gentrification as per market mechanisms even without the impact of the earthquake and international aid presence.

However, after the earthquake, more and more literature on urban development in Kathmandu started pointing towards a pattern of gentrification, especially in the case of core historic settlements such as Lalitpur near Patan Darbar Square, where there has been a rising trend of converting traditional Newari homes into Airbnb with the help of out of country private investment (Bajracharya, 2017). Several papers investigated the role of disaster management policies at that time to point towards rising urban inequity (Chaudhary 2020; Israeli, n.d.; Daly et al. 2017) in the infrastructural upgrades made after the earthquake using Belt Road Initiative funds from China post the earthquake("'Silk Road Here We Come': Infrastructural Myths, Post-Disaster Politics, and the Shifting Urban Geographies of Nepal | Elsevier Enhanced Reader" n.d.). The Belt Road Initiative is a 1 trillion dollar investment in trade, development and road connectivity and is financed largely by Chinese banks and SOEs, taking the form of mostly soft loans rather than grants.

Gentrification, at its core, can be defined as a rising rent environment due to associated forms of market induced displacement. However, most researchers of the Global South reject the term 'gentrification' as an identifier for neighborhood externalities in Global South cities, terming it agnostic to the peculiar complexities of Global South cities (Ghertner, 2015.) For the purposes of this thesis, even when we do talk about an increase in rent environments and consequent displacement of low income groups, I will use the term 'neighborhood change' or 'negative neighborhood externalities' as opposed to gentrification, keeping in mind that these changes have been affected not by market induced changes, but due to the impact of both the earthquake and other external actors, and not by unbiased market demands. Neighborhood change in South Asia can be categorized by a number of indicators, including but not limited to: access of amenities, change in the quality or type of housing typologies, increasing rent environments, socio economic status and demographics (Mitra S., & Murayama Y. ,2018). Further, in keeping with the directions of research in discussing urbanization and development in Nepal, the thesis determines markers of neighborhood change as an increase in rents, land prices, a change or increase in small business ownership and a clustering of amenities and infrastructure distribution.

Research within Nepal in understanding urbanization patterns in the aftermath of the earthquake have also

focused on the roles of actors in manifesting this change, be it the role of government agencies, social actors (community based organizations) or the role of international development groups in capacity building, reconstruction, implementation or the financing of housing and infrastructure (Daly et.al, 2017).
Nepal is a fascinating case study for Bello's theoretical definition of the 'relief and reconstruction complex', where he analyzed the motivations of the same key actors who emerge in post disaster response across the world - namely the World Bank, INGOs and the US military and political command, to push privatization and soft diplomacy agendas. In Haiti and post hurricane Mitch, Bello portends that the World Bank pushed a privatization agenda, and further dominated weak local and national governments at the helm to push their strategic country goals (Bello,2006) . Carolini (2021) goes a step further to analyze not just the motivations of development agencies, but the negative externalities that emerge from their impact on urban neighborhoods—particularly in capital cities where they headquarter—and enhanced urban inequities due to their presence and operations by conducting a much more spatially sound analysis (Carolini, 2021). Both theoretical frameworks are applicable in post-earthquake Nepal. While this may not fit neatly into the contours of gentrification theory, the role and presence of international humanitarian actors and the pressures of their current and lasting needs and their relationship to patterns of neighborhood externalities in urban areas is a knowledge gap that is being addressed by this thesis.

4. Gathering Data and Developing Evaluative Methods

This thesis leverages a mixed methods approach—using both quantitative and qualitative methods—to explore the spatial and socio-economic imprint of aid operations in Nepal post the 2015 earthquake. I use publicly available data by the National Reconstruction Authority, the Lalitpur Municipal Authority, and semi-structured qualitative interviews collected across selected sites using stratified random sampling to select interviews in a transect walk. In addition, focus group interviews and targeted interviews of ward officers were also collected. All interviews were coded for patterns of neighborhood change and externalities spatialized within respective wards.
This thesis is also an effort to engage in quantitative data collection and synthesis to examine the clustering of aid organizations and their projects. To this end, I used publicly available data from FourSquare data, Google Places scraping, text to geolocation geocoding of addresses from local regulatory bodies, quantitative geospatial analysis on GIS using composite indexing, and coupled this mapping with linear probability regression using binary variables that typified experiences across three districts within the main site of my study, namely Lalitpur. The specific datasets I used are listed here below:

Datasets:

i. **Georeferenced datasets of international aid supported projects initiated from 1997-2014:**

Sourced from William and Mary Institute's Aid Data dataset ("AidData — A Research Lab at William & Mary" 2022.), all projects sanctioned with foreign aid funding in Kathmandu were isolated with a spatial join, based on their funding amounts, sector of aid, implementation status and status of aid disbursement to each district.

ii. **Georeferenced datasets of all projects initiated by China in Kathmandu till 2020:**

Sourced from William and Mary Institute's Aid Data dataset("AidData — A Research Lab at William & Mary" n.d.), all projects sanctioned by China till 2020 in Kathmandu with attributes of funding promise amounts, disbursal amounts, stage of completion and their ministerial affiliation were spatially joined to district level shapefiles of Kathmandu. Since China is not a part of the Development Assistance Committee (DAC) of the Organization for Economic Co-operation and Development (OECD), China aid is classified separately and is not considered part of overall international aid.

iii. **Georeferenced datasets of UN Flash appeals from 2015 from Aid Data in Kathmandu:**

Sourced from William and Mary Institute's Aid Data dataset, all projects sanctioned as part of the of 2015 UN Flash appeals immediately after the 2015 earthquake were georeferenced and spatially joined to each district.

iv. **Presence of International NGOs as registered with the Social Welfare Council in Nepal:**

All international NGOs and NGOs in Nepal must be registered officially with the Social Welfare Council in Nepal. The CSV files of office locations of international NGOs in 2014 and 2020 in Kathmandu Valley were geocoded and georeferenced on QGIS, and spatially joined to each district. Since addresses in Kathmandu have still not been consolidated by the street naming department, this is an evolving dataset that needs to be cleaned further and updated.

v. **Google API scraped locations of embassies:**

60 embassies scraped using google places API in Kathmandu valley were geocoded, georeferenced and spatially joined to districts. Embassies were used as a dataset to indicate the presence of personnel in a particular ward.

vi. **Building permit data of Lalitpur Municipal City, E-BPS:**

Data for disaggregated new building permits in wards 2,16, and 26 were isolated and a time series change from 2014 – 2022 was mapped to see the rate of increase in construction in each ward and across Lalitpur.

vii. **Data from Housing Relief and Recovery Platform:**

Data from internationally funded housing recovery (both individual and neighborhood level) has been mapped as a part of the HRRP for all wards across Nepal. Lalitpur data was isolated to identify the total number of funded projects across ward 2,16, 26 in Lalitpur.

viii. **Data from the National Reconstruction Authority Portal:**

Data from the apex reconstruction authority from the national government of Nepal for public infrastructure, heritage projects, and damage assessment was isolated for Lalitpur Mahanagarpalika Municipality.

ix. **Data on land values from Kathmandu Valley Development Authority (KVDA):**

A land value estimation of various land types from 2010 was acquired from KVDA. This was used to estimate a base land value estimation for each ward.

x. **Data from 15 resident/business shop interviews randomly selected in transect walks across 1- 1.5 km stretches in selected wards in Lalitpur::**

Both qualitative and quantitative data was collected across 15 interviews in 3 wards in Lalitpur - 2,16 and 26 using a survey questionnaire. Each survey answer was then assigned a dummy variable and encoded.

Variables of study:

For a situation as complex as the one in the aftermath of the Nepal earthquake, there were several overlapping impacts on neighborhoods that may influence neighborhood change patterns, namely -

1) The impact of the earthquake on the reconstruction rates and housing typologies within wards in urban areas:
   Herein, the questions arising from the impact of the earthquake are - did new building codes lead to an increase in the house prices and rents? Did the earthquake leave certain neighborhoods rent distressed and abandoned because of which recovery was low? Did the drop in housing and rent prices post the earthquake lead to opportunistic buying of both commercial and residential spaces within certain wards?
2) The impact of foreign reconstruction aid-built projects:
   Did the projects reconstructed using foreign aid in and of itself inspire adherence to a certain type of building design and reconstruction method that led to an increase in construction costs and thereby an increase in housing prices? Was there a motivation behind why certain built projects were located in certain wards, and did those locational decisions lead to negative externalities?
3) The impact of foreign reconstruction aid personnel: Was there a correlation between the presence of foreign aid workers, and their need for amenities and infrastructural upgrades that led to neighborhood externalities within particular wards? Additionally, the impact of tourism related activities overlap geographically in certain wards with aid related activities. How would the impact of tourism be differentiated from the impact of foreign aid workers in the same wards?

Profiling of variables:

xi. Profile of Built Projects:

A majority of the reconstruction process in Nepal focused on rebuilding private housing. Since reconstruction aid for privately owned houses in Nepal was accomplished majorly through cash based transfers by the Government of Nepal and supported by the World Bank, USAID and a multi donor trust fund to implement owner driven housing, it cannot be classified as a completely international donor aid funded project since it required considerable self-contributions from the beneficiaries as well ("Nepal Earthquake Reconstruction | Fact Sheet | Nepal" 2023). However, several other public infrastructure or heritage reconstruction projects were undertaken using considerable funds from partner organizations in conjunction with the NRA. Particularly, the UNESCO world heritage site of Patan Durbar Square was reconstructed largely through a consortium of donor funds spearheaded by UNESCO. Additionally, partner organizations based out of the country provided capacity building, technical support through their personnel, transportation, materials and grants, cash or direct loans. For public infrastructure projects, Asia Development Bank, Japan India Cooperation Agency and USAID remained the top donors/partner organizations ("NRA Reconstruction Portal" n.d.). Further on in this paper, the distribution of these built projects across wards will be discussed.

xii. Profile of Personnel:

Official information regarding the number of personnel or foreign aid workers on the ground is unknown, even to the Social Welfare Council. News reports immediately after the earthquake report the presence of at least 300 aid workers on the ground from Israel and India alone for humanitarian efforts as a part of bilateral arrangements (Scott 2015)**.** However, observer reports suggest a much higher in-country presence of foreign humanitarian workers. As per Mr.Sanjay Malik of the SWC, there was a larger operational presence of foreign aid workers so as to strengthen existing capacities on the ground for existing international NGOs. In addition, extant literature also suggests that there was support from local volunteers and local NGOs that formed coalitions in the aftermath of the earthquake, that helped INGOs, and Cluster agencies reach remote locations (United Nations, 2015).

While this may be a generalization, as per the SWC, foreign aid development workers who stayed long term in Nepal usually tend to be either country managers or experienced associates (3-5 years). Humanitarian workers, especially in the aftermath of the earthquake, tended to be younger volunteers, students, or field personnel stationed by their respective INGOs in Nepal for a shorter duration (0-3 years). The long-term impacts borne as a result of living stresses of personnel therefore was a result of longer-term development workers who stayed on after the earthquake as a more permanent country personnel rather than the increase in the quantity of short term workers.

The needs of long-term foreign aid workers included the needs of their immediate family, who live as dependents. This includes additional stresses such as the need for schools, culturally diverse grocery shops, restaurants, meeting spaces etc. In addition, their needs also had an impact on the retrofits of new buildings, including weatherization and furnishing that most homes in urban areas do not have. As per a foreign aid worker from USAID who wished to remain anonymous, there may have been benefits to traveling to a location such as Nepal, including housing benefits for INGO workers. Additionally, according to Michael Anthony of the Lincoln school, a North American college preparatory school in Lalitpur, and a resident of Lalitpur for over a decade, several INGOs offer pay raises or benefits to aid workers, and additionally help them secure housing within neighborhoods of their choice (Anthony, Michael 2023).

Figure 17:Residential Quarters for Habitat for Humanity, Ward no.2, Lalitpur

Figure 18: Residential quarters for Li-Bird in Ward no.2, Lalitpur

Figure 19: JICA headquarters in Ward no.2, Kathmandu

Limitations of methods and variables :

There major limitations delimit the robustness of the methods I deploy here to analyze aid's urban footprint in Lalitpur. They are:

1. Information loss:

Some of the limitations of this method of profiling and accruing data from government sources is the information loss that has occurred in the amount of time that the disaster took place. It has been 7 years since the impact of the disaster was acutely felt in Nepal, and since then, the effect of the disaster has been superseded by the effect of the covid pandemic in 2019-20. The thesis therefore had to rely on anecdotal data while doing qualitative interviews, and scrape for data in a particular period from 2015- 2019 to isolate the impacts of the earthquake from the impacts of covid.

2. Data deficiency: Even though methods now exist to geocode publicly available data, Nepal does not rely on global methods of street naming, addressing and digital reach. Further, documents are available in Nepali, and not frequently updated.

3. Data bias: Since data has been collected primarily by INGOs and UN agencies which may or may not have a bias within the areas of data collection, or hindered by ease of access to locations, it is hard to find data that may not be free from bias.

Selecting Three Sites in Lalitpur for In-Depth Analysis:

Spatial clustering of field outposts in urban areas and beneficiary projects:

On spatially analyzing the presence of field outposts of INGOs, embassies and aid beneficiary projects from the SWC, Aid Data and Google places data, using geo locations in QGIS, two urban spatial clusters are immediately identified. Kathmandu Mahanagarpalika and Lalitpur Mahanagarpalika have the highest clustering of both embassies and international NGOs.

Kathmandu also has a clustering of international aid projects within core city limits. Interestingly, aid dependent projects sanctioned before 2014 had no such spatial clustering and were equally distributed across the valley.

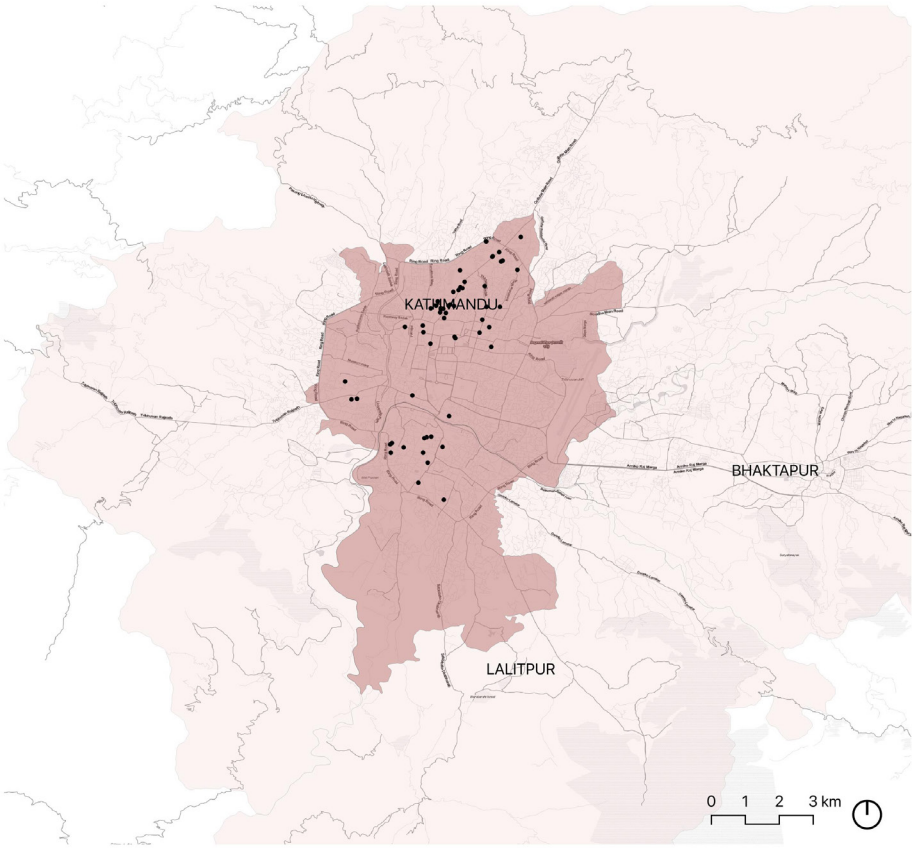

Figure 20: There are 47 embassies in Kathmandu and 12 in Lalitpur as opposed to none in the rest of Nepal

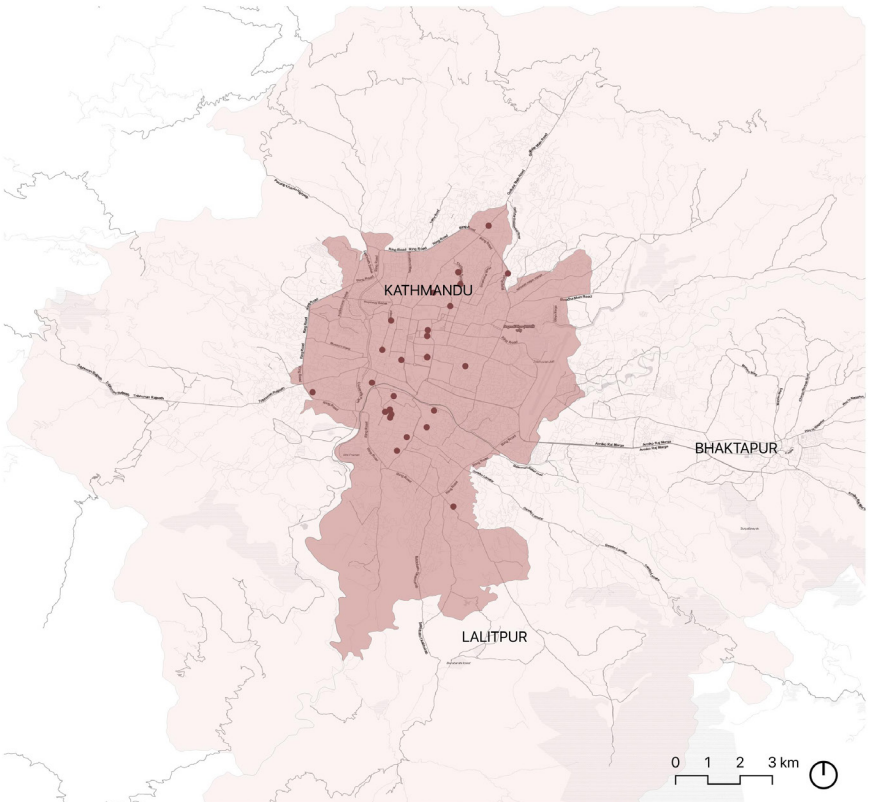

Figure 21: There were 115 INGOs in Kathmandu Mahanagarpalika and 59 INGOs in Lalitpur Mahanagarpalika in 2014 out of a total of 213

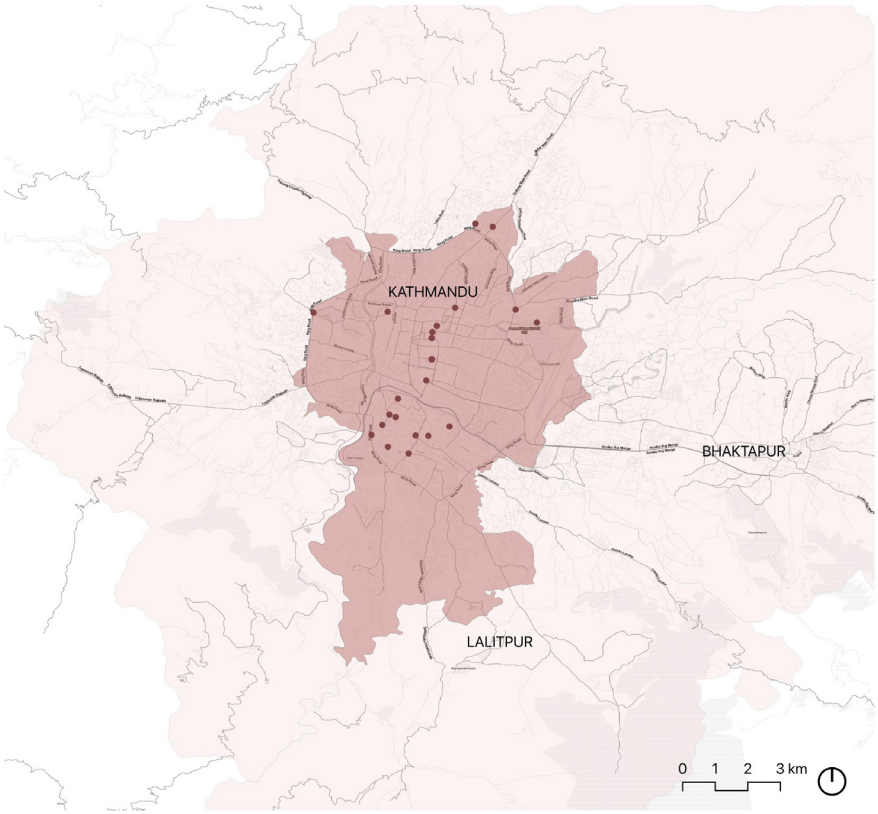

Figure 22: There were 111 INGOs in Kathmandu Mahanagarpalika and 69 INGOs in Lalitpur Mahanagarpalika in 2020 out of a total of 230| Caveat: There might an underrepresentation due to inconsistencies in geocoding SWC data

Particularly, two wards – Lazimpath (Ward 2, Kathmandu) and Sanepa (Ward 2 Lalitpur), have the most clustering of INGOs and embassies. Lazimpath, a ward where the first embassy was established (US Embassy in 1958) is now called the 'Embassy area' because of the mushrooming of several other embassies in the same ward. Conversations with the Lazimpath ward counselor led to the assumption that there wasn't an increase in the number of embassies or INGOs after the earthquake in Lazimpath. On the contrary, after the covid pandemic, several country headquarters of INGOs in Lazimpath had shut shop within the country. The impact of the earthquake, as such, was not disproportionately felt (Ward 2 (KMC) official, 2023).
However, Sanepa in Lalitpur took a different trajectory post the earthquake. Jhamsikhel, a sub locality in Sanepa is now called colloquially as 'Jhamel', an abbreviation of Jhamsikhel and Thamel (one of the most tourist-oriented areas of Kathmandu) due to the increased presence of foreign aid workers within the ward. Conversations with both SWC and Ward no.2 officials pointed towards an exponential increase in the number of personnel and projects in Lalitpur rather than Kathmandu in recent years, and particularly post 2015 (Maharjan Rajesh 2023). This thesis will therefore focus on Lalitpur as an emerging urban area which has imbibed the impacts of both post-earthquake reconstruction and the operational presence of embassies and INGOs and analyze the spatial distribution of emergency reconstruction aid in the aftermath of the earthquake across 3 wards in Lalitpur.

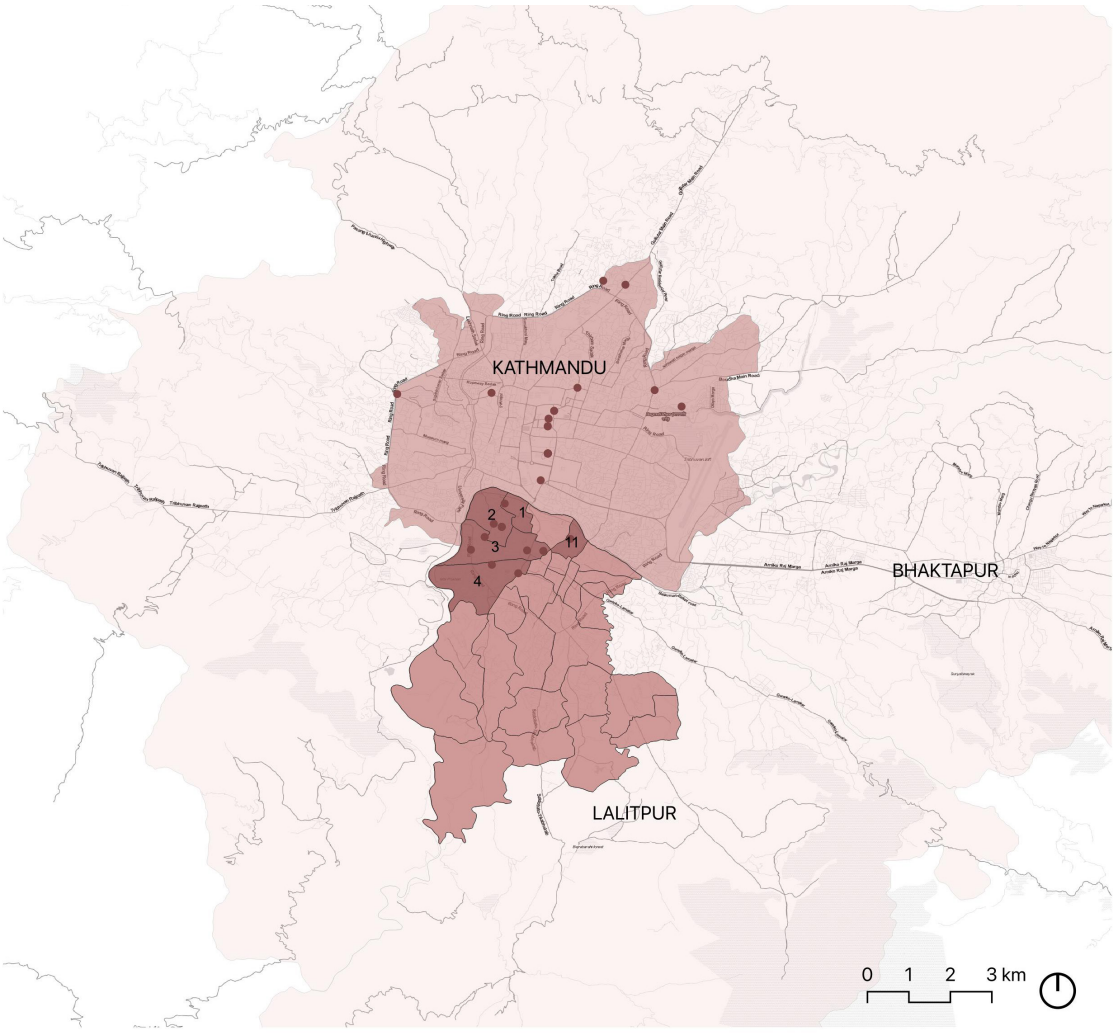

Figure 23: Wards 1,2,3,4 and 11 have the most concentration of INGOs and embassies In 2020

5. Spatial distribution of funded international aid projects in Lalitpur Metropolitan City

c. Ward wise damage assessment in Lalitpur Municipality:

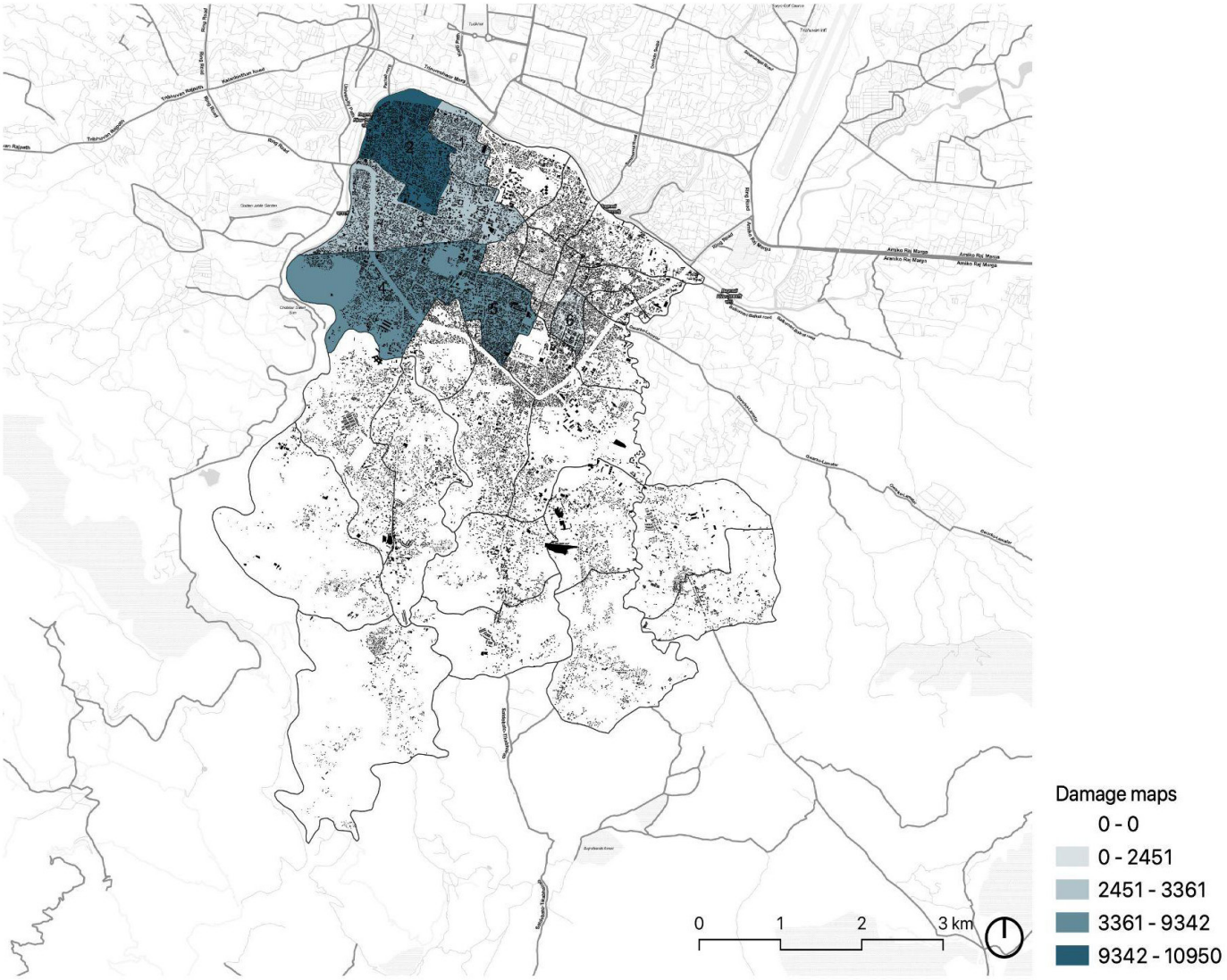

Figure 24: Distribution of damage across Lalitpur wards after the 2015 earthquake | One of the limitations of assessing damage across the wards in Lalitpur is the concentration of data in the Northwest wards closer to Kathmandu city. It is difficult to ascertain whether this is because these were the only wards that were surveyed due to ease of access of NGOs, or because this a geo aggregation gone wrong | Readapted from the National Reconstruction Authority portal, accessed in 2023 |

d. Spatial distribution of public projects in Lalitpur

In Lalitpur, 25,508 structures were damaged by the earthquake (NRA,2022). This thesis will particularly analyze the public infrastructure that was built using international aid in Lalitpur rather than focussing all inclusively on every structure that was reconstructed with international funding.

Particularly, publicly available data from the Nepal Reconstruction Authority's portal on reconstruction aid with the help of partner organizations was accessed and analyzed by ward to understand their spatial distribution.

I looked at education buildings (schools, universities etc.) built entirely through donor aid, heritage buildings and road infrastructure buildings to create an index of the wards with the most reconstruction of structures by

foreign aid. The data available was aggregated at ward level, and was sometimes biased due to technical error. I therefore also relied on qualitative and observational data to correct the datasets, particularly for heritage structures and for Ward no.2. Only road and infrastructure data was available as individually geolocated shapefiles.

In addition, I added the Housing Recovery and Reconstruction Platform's data on housing aid by partner organization, per ward. This is different from owner driven housing that included only cash disbursement to owners, but also includes housing related activities such as capacity building and material disbursement to households for reconstruction.

In order to create an index of equally weighted indicators, I created a composite index with the z score standardization, to identify the distribution of projects within wards. Z score standardization is the most relevant method of normalization to capture the variance between variables with large ranges.

Figure 25: Distribution of heritage structures across wards in Lalitpur| Readapted from data from the National Reconstruction Authority, accessed in 2023

Figure 26: Distribution of schools across wards in Lalitpur| Readapted from data from the National Reconstruction Authority, accessed in 2023

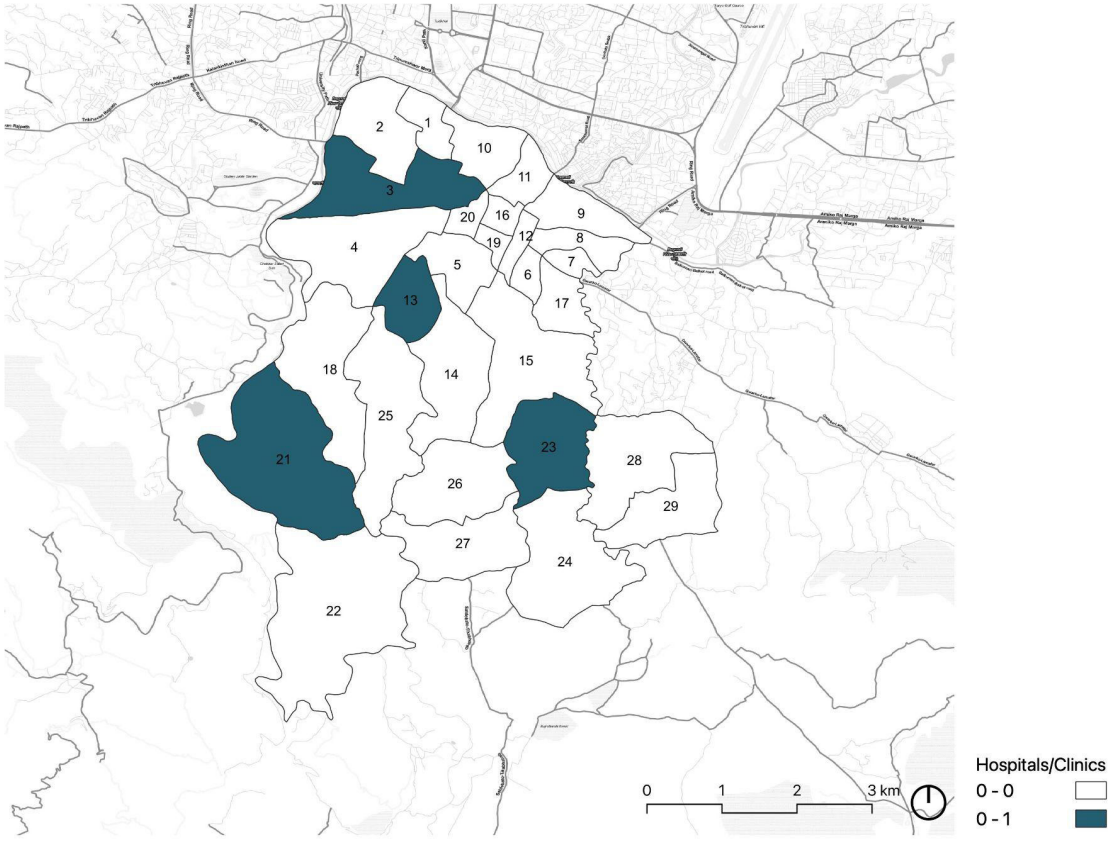

Figure 27: Distribution of hospitals across wards in Lalitpur| Readapted from data from the National Reconstruction Authority, accessed in 2023

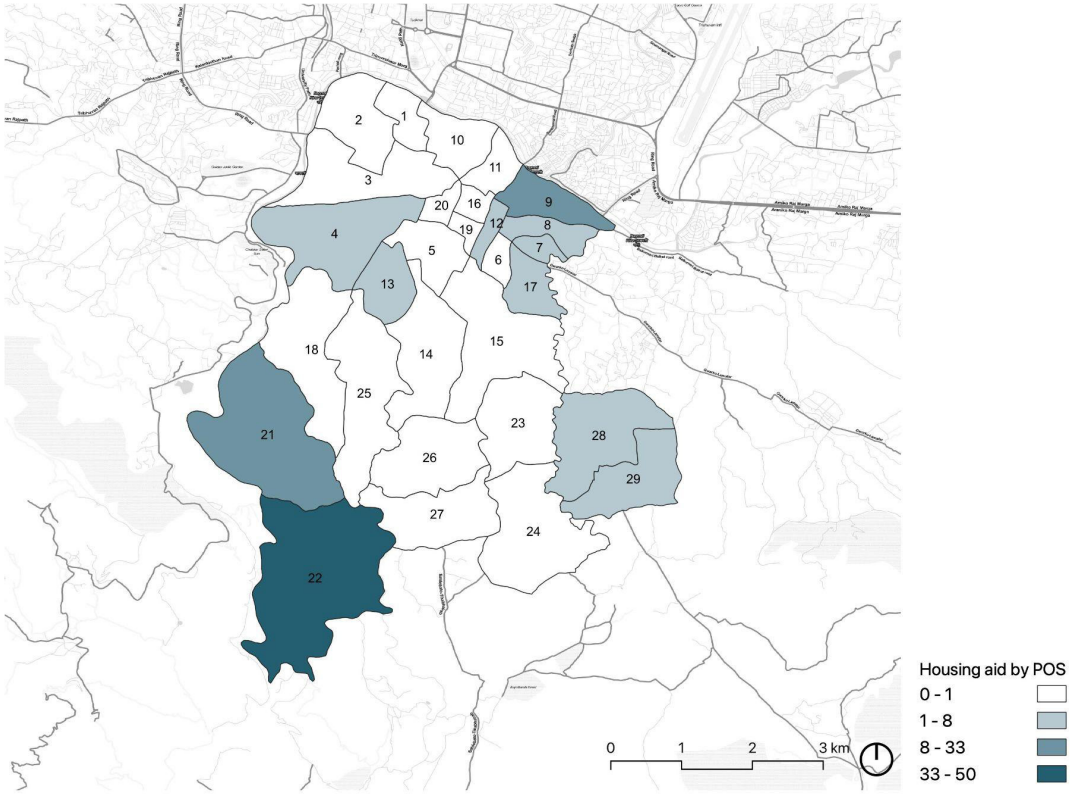

Figure 28: Distribution of housing aid across wards in Lalitpur| Readapted from data from the Housing Reconstruction and Recovery Program, accessed in 2023

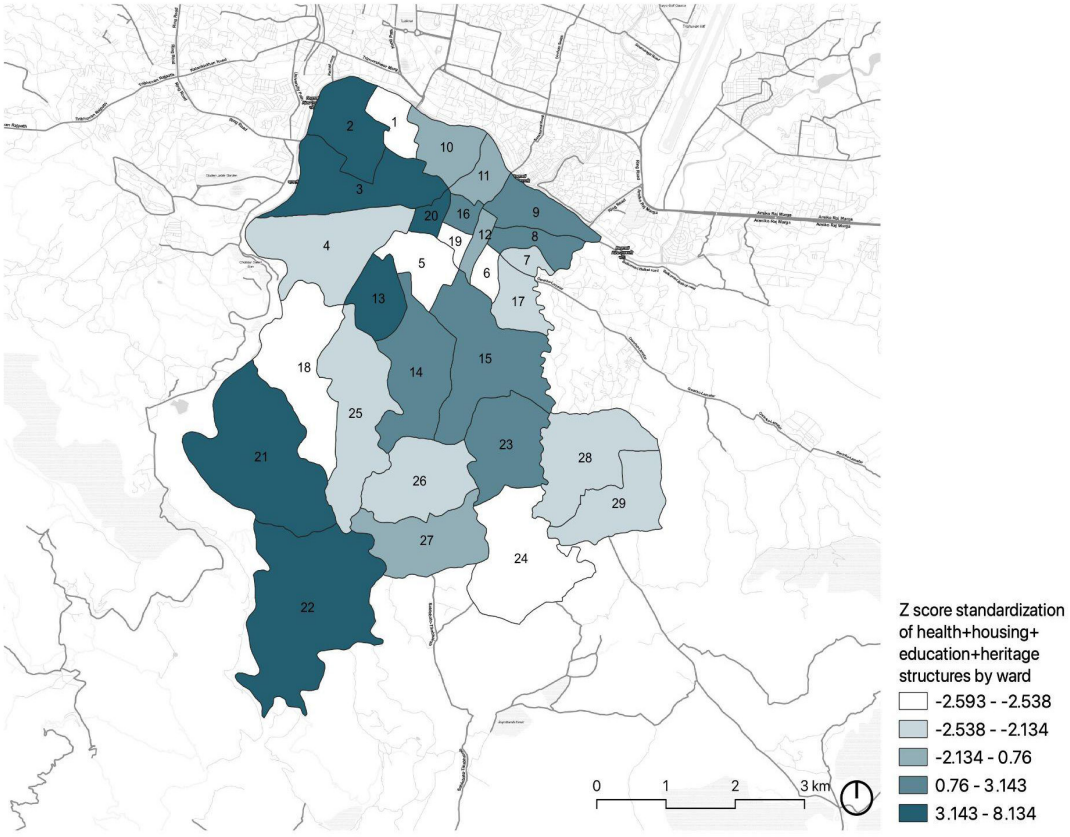

Figure 29: Index of reconstruction aid projects across wards in Lalitpur| Readapted from data from the Housing Reconstruction and Recovery Program, accessed in 2023

Initial site analysis:

The spatial clustering of projects built by international aid within Lalitpur as seen in Fig.27 is concentrated within the northern part of the *Mahanagarpalika* (Metropolitan City) in wards 2 and 3 and the south western parts of the metropolitan area in Wards 21 and 22. This clustering indicates certain affinities for funding projects which are either tending to be located away from the city center and towards rural areas (Wards 21 and 22), as indicated earlier by the qualitative accounts of INGO and NGO workers, or in the wards with the highest concentrations of INGOs and embassies (Wards 2 and 3). The nature of this clustering is commensurate with the assessment of damages across wards as tabulated in the NRA portal (See figure 22). Most heritage reconstruction structures (19) are located within ward no.16 i.e. Patan Darbar Square.

Ward wise analysis of projects and personnel:

Analysis of the distribution of INGOs, embassies and projects in Lalitpur Metropolitan City, one finds that there is a clustering and subsequent increase in the number of personnel that lived in Lalitpur after the earthquake, and that led to an increased pressure on infrastructure and services within Ward no.2, 3 and 1, where most of the INGO presence is located.

Further, in order to understand the pressures on infrastructural services and neighborhood change in these wards, I will be focusing particularly on ward no.2 and ward no.16 in Lalitpur, as an example of a ward with the most concentration of public projects funded with international aid.

In addition, I will be conducting a counterfactual analysis in ward no. 26, which was pointed out by Mr. Paudel as being one of the most underdeveloped wards in Lalitpur Metropolitan City. “A counterfactual is interpreted as a statement about how things occur in other possible worlds governed by the same laws of nature” (Lewis, 1973). To counteract the argument that development would have reached these wards irrespective of the impact of international aid, the study chose a ward which has no known presence of either international aid projects (that were complete) or international aid personnel to understand the pressures of development and measure the impact of international aid.

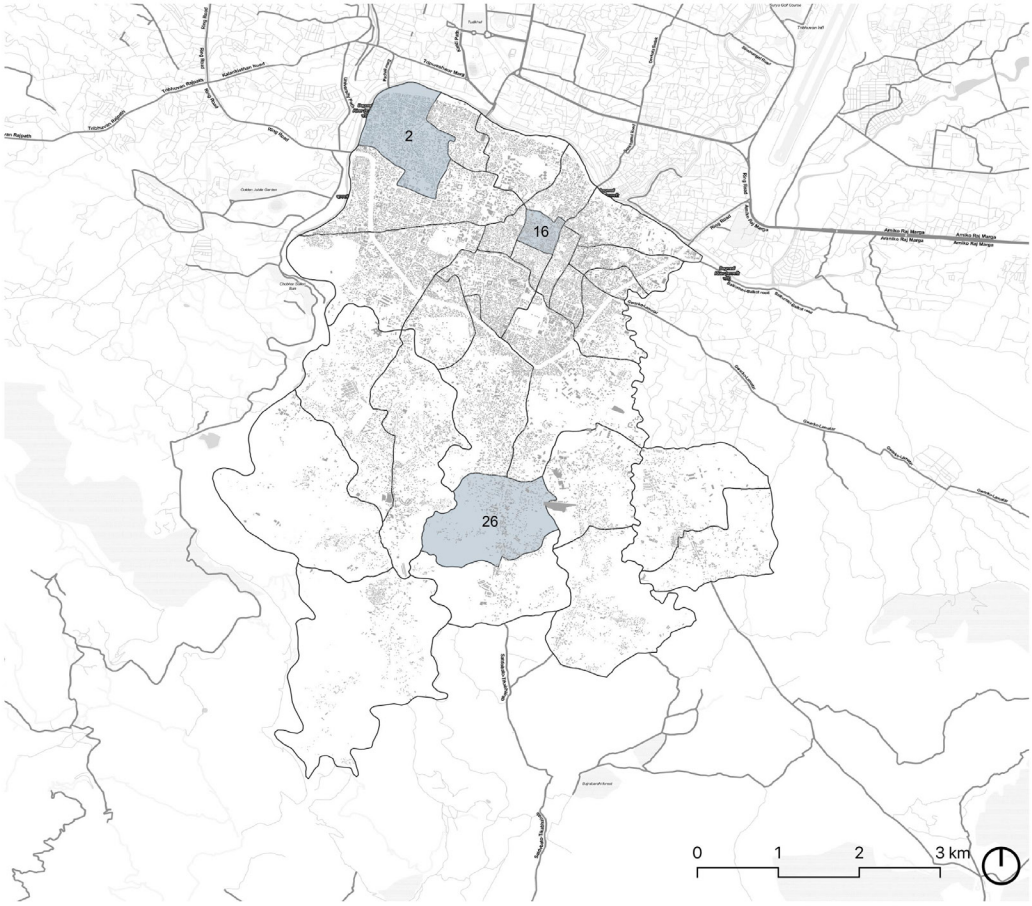

Figure 30: Selected sites for further analysis: Wards2, 16 and 26

6. Neighborhood change in LMC from 2014-2022

During my fieldwork across December- January 2022-23, I conducted interviews with ward officials of wards 2,16, and 26 and structured interviews with Pradip Paudel, the Chief Building Engineer of the Lalitpur Metropolitan City Authority, who has worked extensively on reconstruction projects in the area after the earthquake. In addition, I conducted qualitative interviews of key stakeholders and small business owners in wards 2,16 and 26, across a 1 km-1.5 km stretch, with up to 5 interviews across a uniform survey questionnaire, as seen in the Appendix.

e. Areas of analysis – Ward no.2,16, 26:

As discussed previously, I delimited my area of analysis to wards 2,16 and 26:

Sanepa - Ward no.2: Sanepa is around 2.2 km away from the main administrative center of Kathmandu. Bordering Teku, Kupondole and Pulchowk, this ward has the most concentration of international NGOs, and Embassies outside of Kathmandu.

Additionally, Sanepa has one of the highest counts of shops, services and colleges for a midsize region as per a data study done on foursquare data (Thapa 2020)

Since 2014 to the present, this area has also seen a change in population demographics, with an increase of 129% in population of the ward since 2011, as a result of employment opportunities, urbanization, and rising densities (Census 2011).

It has a total population of 19061 people in an area spanning 1.1 sq.mi. Additional ward profile information can be found in the Appendix.

As per Mr. Paudel, Lalitpur Ward no. 2 and no.3 are also one of the largest property taxpayers in the metropolitan area, since they have the largest percentage of commercial areas in LMC (Paudel, Pradip,2022). Property taxation on commercial areas and offices ranges from 0.05 -1.5% of the market value of the property("Nepal — Orbitax Country Chapters' ' n.d.), which gives us a fair estimation of the land and property values in Ward 2. As per NRA data, Ward no.2 suffered damage to 10,950 structures in the aftermath of the 2015 earthquake.

Patan Durbar Square - Ward no.16: Ward no. 16 is home to the UNESCO World Heritage Site Patan Durbar Square area, which is a historic palace square dating back to the 15th Century. This historically has been the old city and city center, and therefore was one of the neighborhoods with the highest rents. Since its UNESCO designation in 1979, Patan Durbar Square and the adjoining area has been a hub of tourist attraction and commercial. However, the area managed to keep most of its cultural and heritage integrity in terms of its built form i.e. most of the structures adjoining the Durbar Square are designated as heritage structures and built in the traditional Newari architecture style. Ward no.16 has the most diverse and high value commercial structures in a low-density population area as per foursquare data (Thapa 2020), and the ward with the most heritage structures reconstructed using international aid (NRA, 2022). Additional ward profile information can be found in the Appendix.

Sunakothi - Ward no.26: Sunakothi is a neighborhood to the southernmost end of the Lalitpur Metropolitan City. According to the 2011 Nepal census, Sunaguthi has a population of 10,092 living in 2397 individual households spread over 1.5 sq.mi. Information about damage to buildings in Sunakothi is unavailable on the NRA website. Sunakothi is a ward that has been created from a former Village Development Committee (VDC) and is now divided into wards 26 and 27 since 2017. This means that at the time of the earthquake, there was no administrative center at the ward level at the time of reconstruction. Additional ward profile information can be found in the Appendix.

f. Stratified random sampling results:

Ward no. 2:

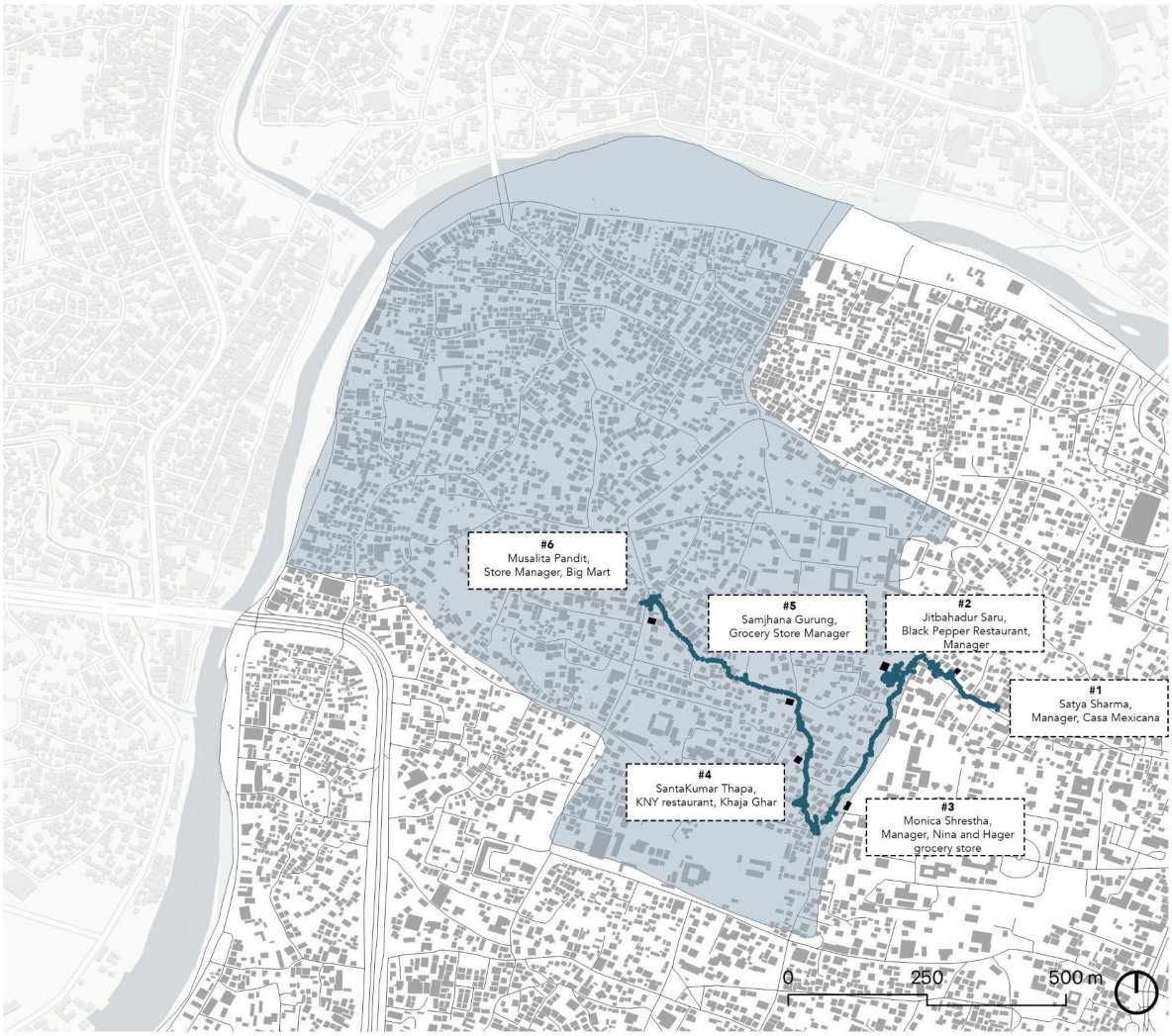

Figure 31: Random sampling across Ward 2 | Conducted in January 2023

Ward no.2, in close conjunction with ward no. 3 and 2, has the largest agglomeration and spatial footprint of international NGOs, bilateral organizations and embassies in Lalitpur. As a mid rise, mid density and fairly residential enclave, Sanepa belies the assumption that it is one of the richest wards in Lalitpur. However, the ward no.2 head office at the Lalitpur Metropolitan Assembly is one of the wards with the most capacity, both staff and technical, and handles one of the largest urban portfolios of all the wards in Lalitpur.

Particularly, as a resident of Sanepa, one of the first observational changes I made was in the increase of services within the area from 2018 - 2022, particularly in the form of small business, restaurants, and the hospitality industry. As a resident of Ward no.2, I had never faced a shortage of water, something which the city of Lalitpur frequently faces with water cuts and leakages. Domestic help and service providers lived within guard houses within gated communities, should the need arise for help around the house, as is common in South Asian households.

The random sampling interviews mainly focussed on hospitality and service providers within the area, as they kept a log of customer preferences and customer turnout within the area. For Satya Sharma of Casa Mexicana and Jitbahadur Saru of Black Pepper restaurant, their customer mix has included a 50:50 ratio of foreign aid

workers and Nepali locals, mostly from within the area (Interview 1, Interview 2, 2023). As commercial spaces, both establishments have seen an increase in rents, housing values and land prices, ranging up to 10% a year. The post earthquake impact in ward 2 was felt in the increase in the number of foreign aid workers on the ground, which while they could not quantify, led to a change in their services in response to their needs. While Casa Mexicana is a new establishment, older restaurants like Black Pepper chose to diversify their menus, and increased their prices as per the paying capacity of their customers.

For Samjhana Gurung (independent grocery store owner), Musulita Pandit (Big Mart staff) and Monica Shrestha (Boutique grocery store manager), the needs of the diverse international population also led to the diversification of products that were sold from their grocery stores, and the preferences of their customers meant that either artisanal stores or big chains were preferred over small grocery stores (Interview 3, 5,6, 2023). For Samjhana in particular, the low rent prices immediately after the earthquake prompted her to opportunistically buy commercial space within Ward no.2, which was an emerging hub for INGOs even before the earthquake. As per Samjhana, the proximity of international schools, a walkable distance to the main urban hubs of Kathmandu and the availability of *cheap* domestic labor are all draws for the foreign worker population to reside in Lalitpur long term. In the time that she has lived here since the earthquake, she has seen an increase of foreign aid workers (after the earthquake), then a sharp decline (after the covid pandemic) and then a subsequent slow increase in the years leading up to the present (Interview 5,2023). In the years after Covid pandemic when the foreign worker population vacated the residential complexes, high income Nepalis replaced the housing supply at the same rent brackets. Musulita, Samjhana and Monica all commute to work, and live in adjoining wards with lesser rents. One of the starkest indicators of negative neighborhood externality is the closure of *khaja ghars,* or small local eateries selling local Newari food items. As per Santakumar Thapa, who has been running his *khaja ghar* for over 10 years now, local stores similar to his have long been priced out, particularly post the earthquake. To cut costs, he has to buy groceries from outside the ward to help mitigate the losses from a loss of customers. He is one of the few service providers I interviewed who resides in Sanepa. One of the benefits of this phenomenon is the provision of better government schools, he says (Interview 4,2023). Overall, the water, sanitation, education and infrastructure services in this ward is one of the best in Lalitpur.

Figure 32: The British School in Ward no.2 in Lalitpur| Ipshita Karmakar

Ward no. 16:

Figure 33: Random sampling interviews across Ward no 16 | Conducted in January 2023

This particular ward encompassing the Patan Durbar Square, by extension, also includes several heritage structures that fall under the purview of UNESCO (Haselberger and Krist 2020). The Kathmandu Valley Preservation Trust (KVPT), channeling a consortium of donor funds, is involved in the reconstruction of the Durbar Square. UNESCO, in partnership with bilateral development and tourism development agencies, additionally restored some old Newari residential houses to convert them into hotels even before the earthquake. News Chhen and Swotha hotels are some of the examples of the same. Even before the earthquake, the area around the historic square was a hub of touristic and local activity, largely driven by local and UNESCO sponsored tourism initiatives. Within Lalitpur, beneficiaries of international donor aid for heritage reconstruction is concentrated in ward no.16, particularly for the reconstruction of the Durbar Square and related *gumbas* and temples within the area.

Figure 34: Reconstruction of Patan Darbar Square using pooled multi country funds and spearheaded by UNESCO and Kathmandu Valley Preservation Trust |Ipshita Karmakar

The soft politics of donor motivations to UNESCO World Heritage sites, and especially Patan Durbar Square are well documented - including "competitive compassion" (Jasparro and Taylor, 2011), and "geopolitical maneuvering" (Paudel and Le Billon, 2020). However, the long term impacts of this concentrated donor interest in this particular ward has remained unidentified.

All the interviewees on the transect walk through this area noted a degree of neighborhood change that points towards the impact of the earthquake on rent and housing prices. For example, Adil (independent artist) who runs the art studio Kaalo 101 in an old retrofitted Newari House, the sharp decline in rent prices right after the earthquake and the abandonment of several traditional wood and brick structures due to safety reasons allowed him to relocate to a space that was previously too expensive for him (Interview 3, 2023). Following their examples, several other art studios have occupied previously residential spaces in old Newari buildings, leading to a thriving arts district that periodically hosts art festivals showcasing both the architecture of the space and history.

AirBnBs such as Cosy Nepal, which was first started by a French couple right after the earthquake, capitalizing on low rent environments at that time are now thriving as short term rentals for both short term tourists and longer term residents who stay in increments of 6 months (Interview 4,2023). The endeavors of private investors catering especially to tourism cannot be defined as an impact of either the earthquake or the impact of personnel of foreign aid. However, agencies such as UNESCO and KVPT had started the ball rolling on funneling donor funds increasingly into reconstruction and retrofit into the heritage houses within the area, thereby setting a precedent for the building construction activity to come. For instance, Swotha and Newa Chhen, both supported by UNESCO and other partner organizations have become reputable hotels within the area which cater primarily to an expat guest experience, charging up to USD 600 for a night (Interview 4,5, 2023). Currently, operations for Newa Chenn are run by a Swedish hospitality company. Ranges for homestays and Air BnBs within the area similarly range up to 200- 400 USD a night, particularly steep for any local resident in Lalitpur.

Figure 35: Reuse and readaptation of heritage Newari houses into art studios and cafes | Ipshita Karmakar

Further, support for upgradation from heritage conservation organizations such as UNESCO and KVPT for traditional Newari houses has created an environment of bidding for grants by house owners. As per Mr. Dakhawa, who also has a heritage home of his own that he would like to bid for grants, this has led to a disadvantage to those who either may lack the know-how or the capacity to write grant proposals, or lack knowledge about these mechanisms of monetary support (Interview 1,2023). Several houses around the Durbar Square now either lie abandoned, or fragile after the earthquake, several of them with visible cracks on their surface. Meanwhile, several private investors and developers are now on the lookout to buy out these properties and convert them into lucrative AirBnBs for tourists (Interview 2,2023).

Figure 36: Readaptation of heritage structures into Airbnb and cafes using support from UNESCO and heritage readaptation grants| Ipshita Karmakar

Small businesses within the area have suffered a shift in quantity and quality of services as well after the earthquake. Commercial spaces that used to cater to livelihoods of artisans that lived in the adjunct areas, or traditional arts and crafts have now diversified into catering for a more global audience, both in terms of quantity and nature of goods (Interview 2,2023). It may be impossible to segregate the impacts of tourism, globalization and privatization from this phenomena to point towards an impact of either the earthquake or the aid community, but invariably this neighborhood change is a complex juxtaposition of all of these factors.

Ward no.26:

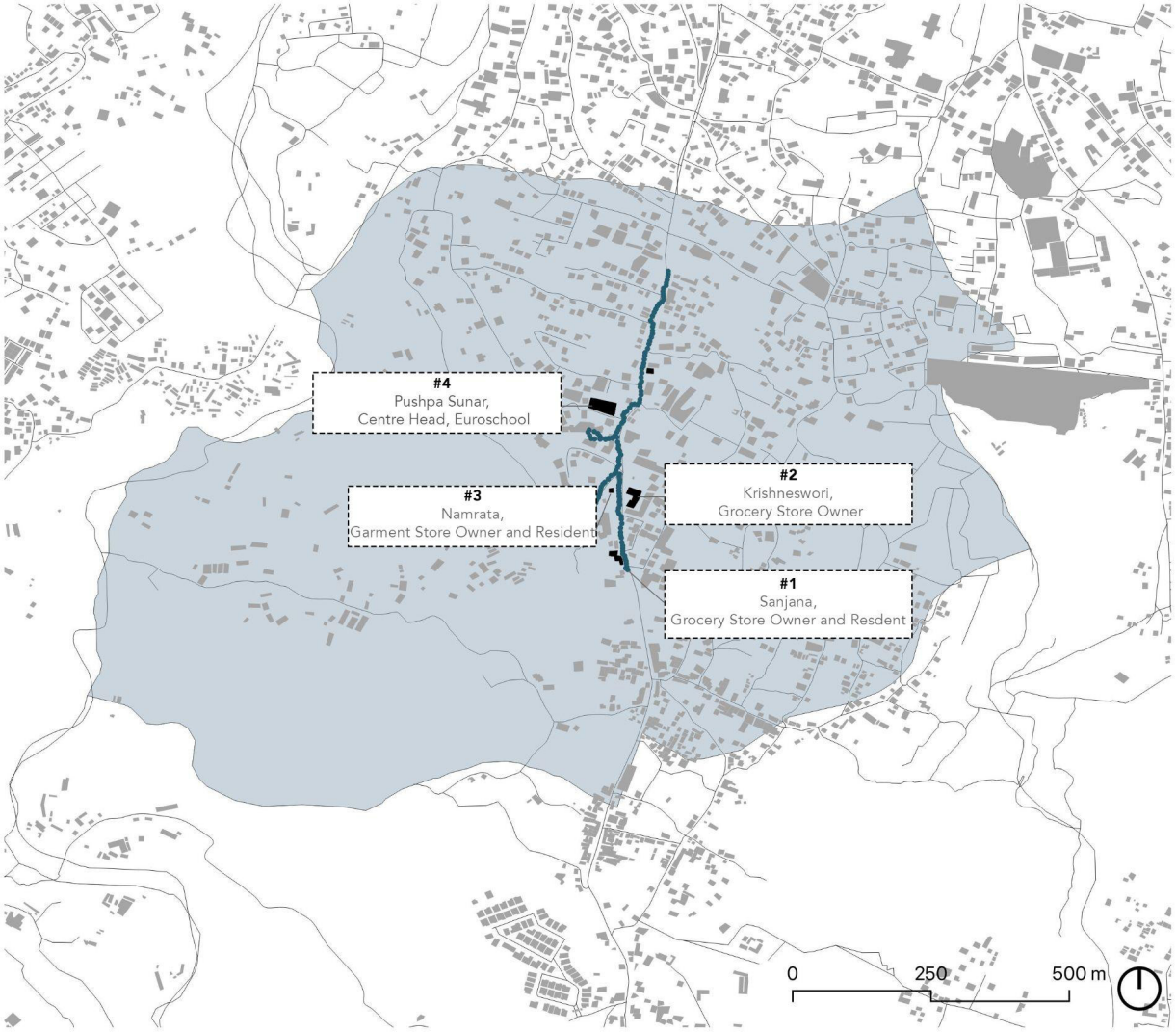

Figure 37: Random sampling interviews across Ward no 26| Conducted in January 2023

Ward no.26 (Sunakothi) was chosen as a counterfactual study of the impacts and effects of international reconstruction aid in Lalitpur. As per the NRA and the HRRP websites, there are no known partner organizations and/or projects within the ward boundaries, and there has been no known recollection of any international NGO working within Sunakothi either before or after the earthquake by the officials in ward office no.26. Ward officials point out that apart from an occasional passing baseline study, there has been no interest shown by INGOs to operate within the ward. Additionally, while the impact of the earthquake was felt uniformly across the valley, only government led owner driver reconstruction activities were carried out within the ward. As per Pushpa Sunai, center head of the Euroschool in Sunakothi, mostly buildings which were over 20 years old showed any visible signs of damage, and only a couple of buildings which were over 50 years old completely collapsed (Interview 4, 2023).

Further, across the spectrum of jobs, livelihoods, small businesses and major infrastructural services, no notable change after the earthquake was noted by either the ward officials or the residents who were interviewed with

random sampling. Demographic change was observed by the interviewees and ward officials in the form of internal migration i.e. migrants from rural areas in Nepal migrated to the urban areas in Sunakothi (Interview 1,2,3, 2023). However, most residents of Sunakothi work in the inner city of Lalitpur or in Kathmandu. Further, rents and land prices have exponentially increased, almost doubling from before the earthquake. Additionally, densification in Sunakothi also increased, with a decrease in the proportion and area of former open spaces (Interview 4, 2023). As per Mrs. Sunai, open spaces in this ward were the areas where victims congregated after their houses were damaged by the earthquake and in subsequent aftershocks. She believes that if another disaster were to occur, the loss of community open spaces would mean more collateral damage to life and property.

Post the earthquake, the NRA constituted a series of building code regulations to ensure seismic safety for new construction and for structural retrofits. Newer construction with NRA certified seismic structures therefore became a lot more coveted than older construction, which significantly increased housing prices (Interview 4, 2023). While there is no known displacement within the area of existing local residents, the increased supply of housing and migration has led to a small but significant neighborhood change.

Figure 38: Urban morphologies of Sunakothi | Ipshita Karmakar

7. Rate of increase of building construction year on year in wards of analysis:

The thesis also analyzed quantitative data such as the year-on-year increase of building permits from 2015-2022 as provided by Lalitpur Electronic Building Permit System and Lalitpur Metropolitan Authority. The building permits data also includes information on retrofits, restoration in addition to new construction:

Table 1: Number of building permits filed across Wards 2, 16 and 26, as accessed from Lalitpur Metropolitan Cities Ebps system | Data from 2022

Year	Ward 2	Ward 16	Ward 26
2015	56	12	16
2016	68	25	32
2017	85	53	52
2018	88	60	94
2019	58	43	76
2020	36	17	46
2021	63	28	63
2022	90	37	75

Table 2: Year on year increase in percentages of building permits permits filed across Wards 2, 16 and 26, as accessed from Lalitpur Metropolitan Cities Ebps system | Data from 2022

Year	Ward 2	Ward 16	Ward 26
2015	-	-	-
2016	21.4%	108%	100%
2017	25%	112%	62.5%
2018	3.5%	13%	80.7%
2019	-34.09%	-28%	-19.1%
2020	-37%	-60%	-40%
2021	75%	64%	37%
2022	42%	32%	19%

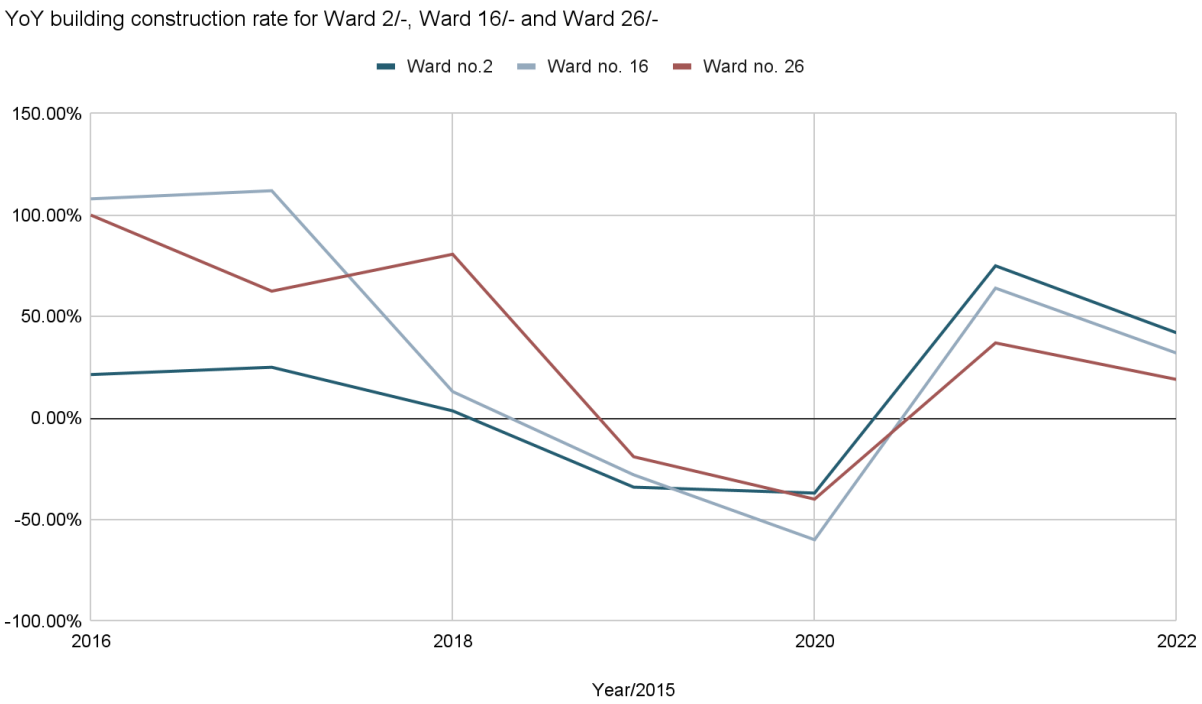

Figure 39: Rate of construction across Wards 2,16, 26 across time series data from 2015 – 2022.

The rate of increase in building permits from 2015 - 2018 in wards 2 and 16 may point towards reconstruction activities being prioritized in these wards as opposed to the reconstruction in ward no. 26. From 2018 onwards, Ward no. 26 filed the largest number of building permits in 2018, when wards 2 and 16 faced a decline in reconstruction rates, perhaps pointing towards the short term period of aid operations. From 2019-2020, a dip in construction activities was noted due to covid. Aside from the global changes in construction rates across all 3 wards, each individual ward has a rate of acceleration or deceleration of building construction services, which will be used as a variable to tabulate negative neighborhood externalities later in the thesis. However, since all wards reacted similarly to similar market forces, and had similar numbers in terms of construction growth, this analysis also serves as a control factor to demostrate the similarity in comparable wards.

8. Land value analysis of selected Wards:

Land values in Lalitpur are predetermined by a government regulated formula, which is set per aana and based on proximities from main, secondary and tertiary roads. The following is a snapshot of wards no.2, 16 and 26 in 2022 as per official data from 2010 from the Kathmandu Valley Development Authority, Lalitpur branch:

Ward no. 2:

Name of Area	**Land Value per Aana (NPR)**
Kupondole, Sanepa, Pulchowk	15,50,000
Back roads	13,00,000
Roads without Tar *(Kacchi Sadak)*	8,00,000
Roads near the traffic circle	22,00,000

Ward no. 16:

Name of Area	Land Value per Aana (NPR)
Main Tarred roads	37,50,000
Secondary Tarred roads	16,50,000
Roads without Tar *(Kacchi Sadak)*	1,75,000

Ward no. 26:

Name of Area	Land Value per Aana (NPR)
Chapagaun main road	13,00,000
Secondary Tarred roads	8,00,000
Roads without Tar *(Kacchi Sadak)*	6,00,000
Goreto Bato	3,25,000
No roads	1,65,000

Table 3: Official NPR values per aana of land in Wards 2, 16 and 23 in Lalitpur | Accessed from Kathmandu Valley Development Authority in 2023

As per Safal Shrestha, chief officer at the Kathmandu Valley Development Authority, land prices are speculative, and rise and fall as per informal market transactions (Shrestha Safal 2023). However, the length and sum of the total road length in a particular ward, when subjected to a buffer analysis and multiplied by its official value already leads us to assume a base land price comparison upon which this exponential speculation is taking place.

Figure 40: Primary, secondary and tertiary road buffers for Wards 2, 16 and 26

	Ward 2	Multiplier	Total Ward 2	Ward 16	Multiplier	Total Ward 16	Ward 26	Multiplier	Total ward 26
Primary road buffer (sum area sq.m)	634746.46	1550000	983857013000	158791.322	3750000	595467457500	675935.051	1300000	878715566300
Secondary road buffer (sum areasq.m)	109778.58	1300000	142712154000	31790.89	1650000	52454968500	-		
Tertiary road buffer (Sum area sq.m)	78470.515	800000	62776412000	15479.469	175000	2708907075			
Total (Saleable area and profits)	822995.555		1189345579000	206061.681		650631333075	675935.051		878715566300
Per aana baseline calculations		15,50,000			37,50,000			13,00,000	

Table 4: Baseline calculations of land value in Ward 2, 16 and 26 using data from KVDA and buffer analysis on QGIS

Assuming these calculations are the base price as per which speculative land transactions are taking place, qualitative data on land value can be used to estimate the price increase of the land currently.

Land type	Ward no. 2	Increase from base-line	Ward no. 16	Increase from base-line	Ward no.26	Increase from base-line
For sale - Primary road type	55 lac per aana	254% increase	45 lac per aana	25% increase	22 lac per aana	53% increase

Table 5: Increase in land values from 2010 to 2023 as tabulated from random sampling interviews

Initial Analysis: The total area encompassed by primary road buffers i.e. the highest value lands within each ward is the highest in Ward no. 2 and Ward no 26. Land tax is levied at a rate of 0.01% to properties (land+ property) ranging over a NPR 0.2 million. This calculation gives us an approximation that Ward no.2 is one of the richest in terms of cumulative land value, while ward no.16 is the lowest (even though it is priced a higher per sq.ft rate).

The most interesting deduction from this data is the price increase rate across wards as per speculative pricing. Ward no. 2 registers a whopping 254% increase as compared to Ward no.16's 25% increase. Ward no. 26 is also increasing in speculative land pricing, but not at the rate of Ward no. 2.

9. Rent analysis of Lalitpur wards:

In order to understand the trend of rental rates within ward no. 26, 16 and 2 after the earthquake and in comparison to each other presently, rental information was scraped from four major publicly available rental information websites such as 99 aanas, GharGhaderi, Nepal Homes and Green Real Estate over the time span of one month from March to April 2023. In addition, I looked at AirBnB websites for short term leases.

Preliminary housing typology specifications of available data:

Ward 2: 11 comparisons - 4 of the listings were 3 beds 3 bath, 3 of the listings were 2 bed 2 bhk, new construction

Ward 16: There were not many listings available, however, 3 listings of refurbished Newari housings were found online in websites other than AirBnB and short term rental sites.

Ward 26: 3 listings available of 8+ bedrooms in a row house. No studios or small single family apartments were listed online.

Approximating average sales comparison from across these 5 websites, a speculative rent structure is deduced for each ward -

Type of space	Ward no. 2 (NPR per sq.ft)	Ward no. 16 (NPR per sq.ft)	Ward no.26 (NPR per sq.ft)
Comp 1 (GharGhaderi.com)	143	409	111
Comp 2 (NepalHomes)	130	15	32.89
Comp 3(AirBnB)	$14 - 76 a night	$11- 65 a night	$10-30 usd a night

Comp 4 (99aana)	116		
Comp 5(Green Real Estate)	83	-	-

Table 6: Sales comparison method for rental variation across Wards 2, 16, and 26 | Sources as above

Real Estate Brokerage Estimates:

The above rent and housing prices were further corroborated by talking to real estate brokers who conducted these transactions, particularly in ward no. 2.

As per Green Real Estate, a residential real estate brokerage company in Sanepa (Ward 2), the following are the rates of rental in Sanepa. During the interview, distinctions were clearly made regarding the rental differences for an expat (foreign aid worker in this case) and a local Nepali person:

Inside the ring road-

1 bedroom = 50,000 NPR to expats (foreign aid workers in this case)

1 bedroom = 35000 NPR to a Nepali person (unfurnished)

Outside ring road:

1 bedroom = 15000 NPR (expats choose not to live outside the ring road)

The following are the rates of buying a house for a local Nepali person:

1 bedroom = 1.25 lacs NPR

Expats are not allowed by law to buy a house. However, many expats in Sanepa form co ownership agreements with local Nepalis to buy property.

The following are the rental rates within Sanepa for a local Nepali person:

1 sq ft = 1.25 NPR for a ground floor space, with spaces ranging from 3000 – 4000 feet

There has been an increasing trend of rents in Kumaripati, Bhaisipati and Pulchowk (Ward 3) after a market saturation in Sanepa, which corroborates with SWC's evaluation of an increasing trend of newer NGOs to migrate to these areas.

Table 7: Estimates from Ward no. 2 real estate broker 'Green Real Estate'

Ward no.2's exorbitant rent differentials for expats and locals are further intensified by Michael Anthony of the Lincoln school, a resident of Sanepa of 15 years who pays $1200 in rent for a 1-bedroom apartment in Sanepa. These are rents for furnished apartments with amenities such as heating, AC etc, he says - all luxuries for a regular apartment owner in Lalitpur, and are not uncommon particularly in Ward no.2 (Anthony, Michael 2023).

Average rents in each ward:

Further, each interviewee in the random sampling process shared the rents they paid for their home or establishment, and their results were tabulated.

Type of space	Ward no. 2	%increase in rents after earth-quake	Ward no. 16	%increase in rents after earth-quake	Ward no.26	%increase in rents after earth-quake
Furnished room for rent	5000 NPR per room - 1200 usd per room	10-15%	15000 NPR for a room in a heri-tage struc-ture	10%	4000-15000 NPR	NA
Commer-cial shop	25000 NPR	5-10%	NA	Decrease	2000-6000NPR	10%
Airbnb rates	$30 per night	-	$20 per night	-		-
Studio space	55,000 NPR	10%	22,000 NPR	10%	20000 NPR	10%

Table 8: Average rents per ward as estimated from random sampling results across Wards 2, 16, 26 as collected in January 2023.

Initial Analysis:Ward no. 2 also emerges as the ward with the highest rental and property values of all 3 wards. Additionally, there is also an intra ward variation in the rents that a local pays vs the rent that an expat is expected to pay, which at times is 3 times more than current market rates, thereby creating inequities in access to housing.

10. Composite Analysis

As a way to analyze the variances across all the factors that have been studied so far, I have assigned dummy variables to the qualitative observations and the rental and land value analysis conducted above. An average increase in the variable observation after the earthquake is assigned a value of +1, and an exponential increase is assigned a dummy variable of + 2. For instance, in the case of migration, if an interviewee answered yes to both an internal migration as well as immigration, it was coded as +2 as a dummy variable. No change in the value of the variable is considered to be a value of 0, and if there is an average decrease in the observational value of the variable, a value of -1 has been assigned to the variable. This is done to capture the inter item variance within the qualitative responses.

Variable	**Ward 2**	**Ward 16**	**Ward 26**
Number of INGOs per ward	+2	0	0
Number of embassies per ward	+1	0	0
Personnel in each ward	+1	+1	0
Tourism in each ward	0	+2	0

migration in each ward	+1	-1	+2
Total	5	2	2

Table 9: Dummy variable assignment for results from 15 randomly sampled and coded interviews

Variable	**Ward 2**	**Ward 16**	**Ward 26**
Land price increase	+1	-1	+1
Rent Increase	+2	1	+1
Housing price increase	+1	+1	+1
Additional WASH services	+1	+1	0
Additional Transportation services	+1	0	0
Additional educational services	+1	0	0
Demographic change	+2	+1	+1
Change in construction YoY rates	-1	+1	+2
Increase or change in small businesses	+2	+2	0
Increase in job opportunities	+2	+2	-1
Total	12	8	5

Table 10: Dummy variable assignment for results from 15 randomly sampled and coded interviews | Increase: +1, No change: 0, Decrease: -1

Further, each variable that was captured as a survey question within the random sampling questionnaire and interviews was further tabulated and assigned a similar dummy variable.
Increase: +1, No change: 0, Decrease: -1
These variables, collected from qualitative interviews of 15 interviews, was averaged to create a spectrum of neighborhood change for all 3 wards -

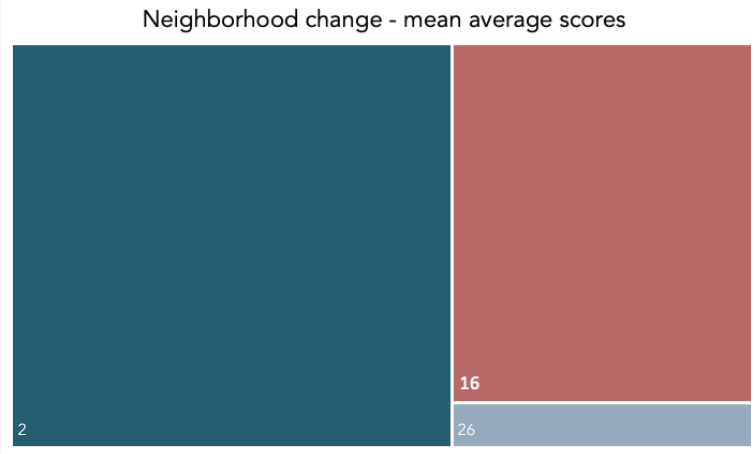

Figure 41: Mean values of aggregated neighborhood change per ward | 5.214285715 = Ward 2, 3.285 = Ward 16, 1.5714 = Ward 26

Finally, the rate of change in rent for properties according to the spectrum of neighborhood change in each of

the three wards was regressed using linear modeling regression for binary variables for Ward 2 as compared to Ward 26, and Ward 16 as compared to Ward 26.

Modeling change in rent Wards 2 and 26

	Dependent variable:		
	Rent		
	Model 1	Model 2	Model 3
	(1)	(2)	(3)
Ward2	1.000**	-0.483	0.923
	(0.346)	(0.905)	(1.648)
Meanavg		2.035	4.846
		(1.167)	(2.993)
Ward2TRUE:Meanavg			-3.312
			(3.249)
Constant	0.600**	-0.040	-0.923
	(0.245)	(0.427)	(0.966)
Observations	10	10	10
R2	0.510	0.659	0.709
Adjusted R2	0.449	0.561	0.563
Residual Std. Error	0.548 (df = 8)	0.489 (df = 7)	0.488 (df = 6)
F Statistic	8.333** (df = 1; 8)	6.749** (df = 2; 7)	4.871** (df = 3; 6)
Note:			*p<0.1; **p<0.05; ***p<0.01

For model 3:

*rent(hat) = -0.923 + 0.923ward2 + 4.846meanavg - 3.312ward2*meanavg*

We predict the neighborhood change of Ward 16 is 0.923 times higher than the average neighborhood change increase in Ward 26. The relationship between rent increase per standard deviation of increased neighborhood change is 3.312 times likelier in Ward no 26 as compared to Ward no.16, however it is not statistically significant.

Modeling change in rent Wards 16 and 26

	Dependent variable:		
	Rent		
	Model 1	Model 2	Model 3
	(1)	(2)	(3)
Ward16	0.000	-0.080	3.688
	(0.346)	(0.891)	(1.967)
Meanavg		0.233	4.846
		(2.365)	(2.966)
Ward16TRUE:Meanavg			-8.140*
			(3.940)
Constant	0.600**	0.527	-0.923
	(0.245)	(0.788)	(0.957)
Observations	10	10	10
R2	0.000	0.001	0.416
Adjusted R2	-0.125	-0.284	0.125
Residual Std. Error	0.548 (df = 8)	0.585 (df = 7)	0.483 (df = 6)
F Statistic	0.000 (df = 1; 8)	0.005 (df = 2; 7)	1.427 (df = 3; 6)
Note:			*p<0.1; **p<0.05; ***p<0.01

For model 3:

*rent(hat) = -0.923 + 3.688ward16 + 4.846meanavg - 8.140ward16*meanavg*

We predict the neighborhood change increase of Ward 2 is 4.846 times higher than the average neighborhood change increase in Ward 26. The relationship between rent increase per standard deviation of increased neighborhood change is 8.140 times likelier in Ward no 26 as compared to Ward no.2, however it is not statistically significant

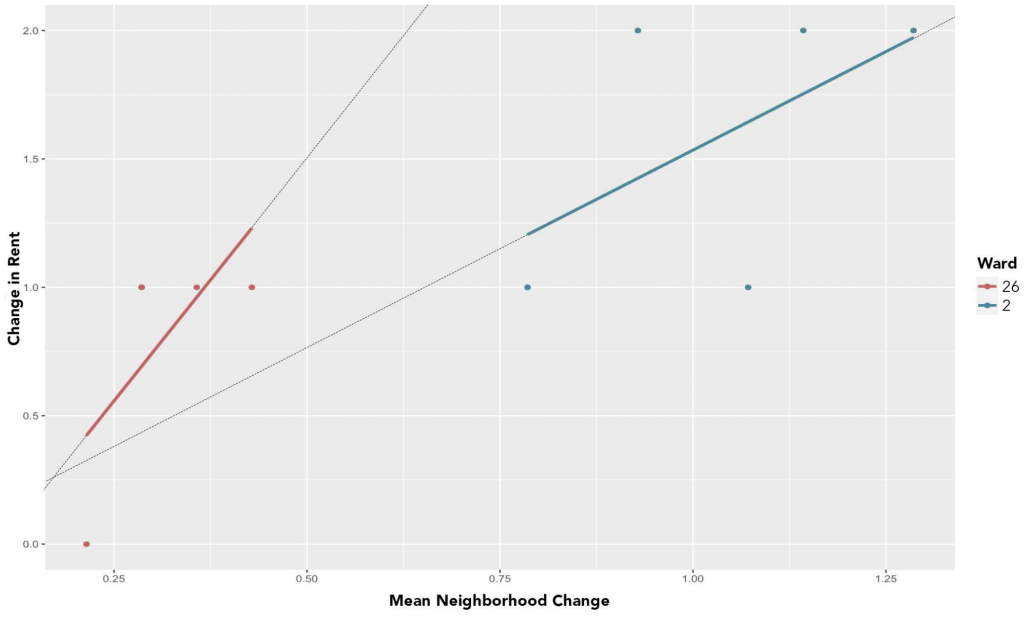

Figure 42: Extrapolation of regressions of rent over neighborhood change for wards 26 and 2

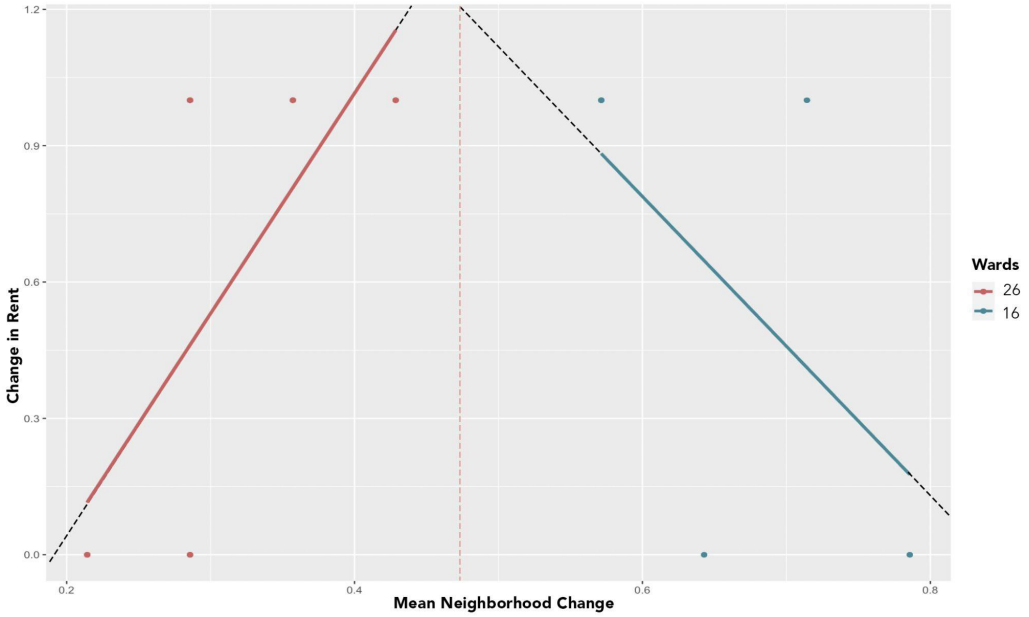

Figure 43: : Extrapolation of regressions of rent over neighborhood change for wards 26 and 16

One of the striking observations from this analysis is that there is a cumulative neighborhood change factor across all 3 wards, emanating from a desire to capture the low rent values right after the earthquake, engage in increased job opportunities and the desire to migrate (Shrestha Safal ,KVDA, 2023). This neighborhood change right after the earthquake, can be attributed directly to the effects and impacts of the earthquake itself.

The overarching impact of this thesis was to prove the hypothesis of accelerating neighborhood change as a direct result of the impact of international aid, both for projects and personnel presence. In addition, the hypothesis hinted towards revealing patterns of gentrification as a result of international aid projects. From the above analysis, it is evident that the acceleration rates of neighborhood change for ward 2 are exponentially more than the neighborhood change for the counterfactual ward 26, almost tripling in the average scores. Ward no. 16, also has an accelerating neighborhood change rate, but not as much as Ward 2.

One of the significant findings from the rental regressions, is the declining change in rent in Ward 16, which belies recent literature on the patterns of gentrification in Ward 16 (Bajracharya 2017; Haselberger and Krist 2020). One of the hypotheses of urban change in Ward 26 after the implementation of post earthquake reconstruction aid is their impact in accelerating gentrification patterns, particularly as pertaining to rising rent environments that displace local residents. While both the quantitative and qualitative study points towards decline of the historic neighborhoods due to the emergence of tourist oriented businesses, they do not point towards a rising rent environment. In fact, the opposite is revealed where the earthquake impact and the emergence of grant funding for retrofit of heritage structures created an opportunity for the rents of a historically high value ward to decrease to accommodate a new class of citizenry - such as younger renters, short term leases and artists who wanted to rent for residencies. It belies traditional studies of gentrification, but it does indicate a definite impact of international aid.

Further, the study and analysis als reveals an oft understudied impact of aid i.e. the rising pressures of the urban footprint of aid workers. Carolini (2021) interpreted the impacts of this aid in an increasing rent environment in urban enclaves where international development aid workers lived, and the extent of foreign aid dominance in municipal budgets in Maputo, Mozambique (“Aid’s Urban Footprint and Its Implications for Local Inequality

and Governance - Gabriella Y. Carolini, 2021" n.d.). Following a similar pattern in Lalitpur, the urban ward of Sanepa (Ward 2) noted exponential rent increase, land value increase (254%), and housing price (upto $ 600 -1200) increase in order to cater to the needs of the international aid worker population. Additionally, small businesses within the area were almost completely displaced, and low income local populations have also been replaced by high income local populations. All of these factors point towards the long term impacts of international aid, and additionally, the impacts of personnel far supersede the impact of projects. Further, coupled with the findings from spatial clustering of personnel and projects, the thesis points towards intra urban diversities in the rate of neighborhood change in Lalitpur, thereby increasing neighborhood inequalities within the municipality.

11. Conclusions

Staff I interviewed in the Lalitpur Municipal Authority are aware of intra urban diversities within the municipalities they serve, and are trying to divert aid towards least developed wards such as 26, rather than 'developed' wards such 2 and 3 in order to rectify some of these inequities. Mr.Paudel, LMC coordinator of the Electronic Building Permitting Services, who himself works with INGOs such as the World Bank and JICA to implement projects in LMC, agrees that the rate of infrastructure and amenity building, as well as new residential construction is the highest in ward no.2, 3 and 1, and the those ward offices are one of the richest in the ward, as a result of high property taxes that are collected within the wards. Instead of focusing on how this exponential change can be decelerated, the LMC targets to instead develop other wards with public funds, so as to decrease inequities (Paudel, Pradip 2023). So far, the amount of funding received, and public projects initiated within underdeveloped wards are unknown. It may be beneficial to conduct the above study at scale to understand the deficits in achieving this equity, and how much funding and aid needs to be provided to tip the scales.

One of the standard mechanisms of checking efficacies of a donor funded aid program is to monitor and evaluate their impacts over the course of the duration of the program and for a number of years after the program ends ("Handbook on Planning Monitoring and Evaluating for Development Result," UNDP,2023). The apex body for monitoring and evaluation of these international aid projects in Nepal is the Social Welfare Council. Evaluation of programs by the SWC is 2 times the duration of the program itself; i.e. if a program duration is of 2 years, SWC monitors the program during its implementation and upto 2 years after the program is implemented. A 4-person team of diverse stakeholders from the SWC, the community, local government and representation from the ministry that has sanctioned the project evaluate the project on key performance indicators such as rate of completion, efficacy and impact and number of beneficiaries who support the project. Based on this evaluation, the program is allowed to continue.

While this is a standard monitoring and evaluation based approach to impact based assessments across the world, it is limited to the direct benefits of the project itself, and not the externalities that may be a result of the 'noise' across the aid effectiveness chain i.e. the impact of personnel and their needs, the increasing flow of dollars within the local markets, preferences of catering to donor aid etc. which additionally creates an impact that cannot be captured by simply tabulating direct benefits of projects. Further, the time period of evaluation of projects is far too protracted to evaluate the impact of long-term change. Gentrification and negative neighborhood externalities take years to manifest and linger on for a period of time. The patterns of change that this study evaluated across urban wards manifested 7 years after international aid projects were initiated, and far

longer than the duration of the program itself. In fact, urban areas continue to bear the externalities of the urban footprint of humanitarian aid professionals who have long since left the country and the municipality.
In Lalitpur, there also exists a duality in the reaction to this kind of urban disparity within the municipality. While communities and academicians name this phenomenon as 'gentrification' and displacement, most aid agencies would term these accelerating neighborhood changes as 'development'. It is the tension within these two tangents, and the 'noise' that is created as a result of other forces of 'development' and gentrification, such as private capital and increasing GDPs, that muddle the possibility of identifying accurately the negative impact of these international aid interventions within the urban scale. This thesis contends that while there may be a tension within the positive and negative connotations of this change, the contribution of this study is in identifying the exponential impact of aid and ward wise disparity in an otherwise developing urban locality as the first step.

12. Recommendations and Way Forward

The thesis posits recommendations for both the Social Welfare Council, as the regulatory body for INGOs in Nepal, and also independent evaluation groups as well as strategy managers of the INGOs that have been studied. In addition, it proposes a set of agendas for the HRRP and the NDRRMA as apex organizations that have been instituted to work in disaster response for any forthcoming disasters. To combat the adverse externalities of humanitarian aid in the next disaster situation in Nepal, all relevant organizations within the field need to be held accountable and responsible for their impacts and imprints, while they effectively dispense aid and address need.

Recommendations for the Social Welfare Council:

As the regulatory body for all INGO activities within the country, the SWC must work towards creating an efficient database of not just the organization's project presence but also its operational presence. It is important to note the number of personnel within the area, their dependents, their needs and their potential impacts, and evaluate the need for a certain threshold of in country operational presence that is strictly required for the project. Second, the SWC should maintain transparency and an updating database of INGO conducted projects and other relevant information for public viewing, especially at the time of increased uncertainty and the rise of xenophobia right after a disaster. Thirdly, the SWC should increase its own institutional capacity to maintain autonomy and impartiality while regulating INGOs and aid, rather than relying on external partners such as the UN to increase it's data management capacities.

Recommendations for INGOs:

Some of the mandates of an INGO's operation is to decrease in country presence, reduce dependency of the host country on the INGO, and encourage autonomy of the host country. The strategic goals of an INGO should ideally never precede these larger overarching goals of all aid organizations. Unfortunately, there have been several instances when INGOs long overstay their welcome, cripple local NGO and local government capacities and create perverse externalities by virtue of their operational presence. In the case of Nepal, several local NGOs who prefer to remain anonymous commented on the inability of INGOs to conduct work without succumbing to pressures of donors, or the inability of INGOs to truly connect to host communities or address needs in places where they do not have administrative capacities. Based on the interviews with local and international NGOs, these are some of the directions that most INGOs are either interested in committing to, or contemplating on researching more about:

1) Defining goals and sectors: Development agencies, humanitarian agencies and peace building agencies within a country should maintain a nexus between themselves as a best case practice (UN OCHA, 2023), in case of any overlapping agendas and keeping in mind long term development commitments within the country. In the case of Nepal, several development INGOs took on a humanitarian agenda in the immediate aftermath of the earthquake, and several new humanitarian organizations took on a development agenda after their entry into the country. This led to an increased in country presence of both development and humanitarian actors, and perhaps duplicitous overheads for country personnel.

2) Emphasizing coordination with all relevant stakeholders: During the earthquake, most INGOs were unable to develop strong administrative relationships with both local governments and local communities, which formed most of the initial volunteer response in the aftermath of the earthquake. Prioritising partnerships and collaborations both before the disaster and in the aftermath of the disaster reduces costs, duplication, and targets priority needs rather than a scattered response.

3) Monitoring and Evaluation: Most

Recommendations for HRRP:

1) The capacities of Housing Recovery and Reconstruction Platform as the chief data management platform for disasters within Nepal, need to be bolstered, both in terms of staff capacity and technical expertise. The current platform hosts several glitches, and each disaster is currently being mapped on a different platform, which creates issues of wayfinding and information management.

2) The current practices of data management do not provide disaggregated data and geolocations of projects are not available. This needs to be rectified in later web platforms and better transparency and accountability measures need to be incorporated within the site itself.

Recommendations for NDRRMA:

1) The National Disaster Relief and Recovery Platform is the national disaster management authority in Nepal currently, having taken over from the National Reconstruction Authority in 2022. Lessons from the successes and failures of the National Reconstruction Authority are being incorporated in the framework of the NDRRMA currently. This thesis will base its recommendations on the response taken by the NRA in the aftermath of the disaster, for further reflection by the NDRRMA.

2) The NDRRMA currently is not an autonomous organization, and is situated within the umbrella of the National Government of Nepal. As an impartial and neutral disaster management authority, the NDRRMA should be an autonomous institution answerable not only to the government but to the humanitarian aid community.
3)The NDRRMA is the apex agency which is in charge of inter agency coordination between local governments, INGOs, local NGOs, community members and national governments. During the earthquake of 2015, the NDRRMA coordinated INGO efforts with national and municipal governments and the Social Welfare Council, however, efforts by local governments, volunteers and community members remained unrecognized and unregulated. The thesis recommends a more inclusive and decentralized approach to levels of command for some of the first responders of this crisis, who remain community members.
4) The NDRRMA should also be responsible for evaluating the bigger picture and long term impacts of these aid efforts across municipalities, and if needed should have the autonomy to redistribute aid to underserved regions and reduce duplication of efforts.

12. Future Research

The thesis would benefit in the long term from a longer and rigorous study and may be applicable not just in the context of Lalitpur and Nepal, but other Global South cities and countries with comparable city sizes, scale of disasters and socio economic conditions. Future research would involve increasing the number of data responses and therefore the regression with more data points. Further, future research can benefit from interviewing more workers of humanitarian and development aid, to understand their perspectives in undertaking work in a high intensity disaster response, thereby presenting the hardships faced by them in this context as well.

13. Acronyms

ADB: Asian Development Bank
DAC: Development Assistance Committee
HRRP: Housing Recovery and Reconstruction Platform
INGO: International Non Governmental Organization
JICA:Japan International Cooperation Agency
KVDA: Kathmandu Valley Development Authority
KMC: Kathmandu Metropolitan City
LMC: Lalitpur Metropolitan City
NDRRMA:National Disaster Risk Reduction And Management Authority
NGO: Non Governmental Organization
NRA: National Reconstruction Authority
ODA: Official Development Assistance
SWC: Social Welfare Council
OECD: Organization for Economic Cooperation and Development
UNOPS:United Nations Office for Project Services
UNDP: United Nations Development Programme
UNDRR: United Nations Office for Disaster Risk Reduction
VDC: Village Development Committee

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15. Appendix

Questionnaire for Ward officials:

	Question
Ownership	What is the ratio of rented or owned households in your ward? Has there been an increase in home ownership or renting in your ward since the earthquake?
Rent Value	Has there been an increase in median rent for a family home in your ward since the earthquake? What is the median rent value?
Land Value	Has there been an increase in land value in your ward since the earthquake?
Demographic	Has there been a change in the income, race or nationality of the people who live in this ward since the earthquake?
Education	Has there been an increase in schools in the area since the earthquake? Has there been an increase especially of international or private schools in the area?
Water and Sanitation	Has there been any upgrades in water and sanitation systems in the ward? Is there an issue with water access?
Livelihoods	Has there been a change in job opportunities in the area? What kind of jobs are being offered and who is getting hired?
Infrastructure	Has there been an upgrade or new infrastructure, road or transportation project in the area?
Services	Has there been a change in the ownership, number and nature of small businesses in your ward?

Modified questionnaire for stratified random sampling:

	Question
Ownership	What is the ratio of rented or owned households in your ward? Has there been an increase in home ownership or renting in your ward since the earthquake?
Rent Value	Has there been an increase in median rent for a family home in your ward since the earthquake? How much do you pay for rent?
Income and Expenditure	What do you spend the most part of your income on – rent, food, education etc?
Land Value	Has there been an increase in land value in your ward since the earthquake?
Demographics	Has there been a change in the income, race or nationality of the people who live in this ward since the earthquake?
Education	Has there been an increase in schools in the area since the earthquake? Has there been an increase especially of international or private schools in the area? Do your children go to school in this area? How much do you spend on schooling?
Water and Sanitation	Has there been any upgrades in water and sanitation systems in the ward? Is there an issue with water access? Do you get water all the time in your taps?

Livelihoods	Has there been a change in job opportunities in the area? What kind of jobs are being offered and who is getting hired?
Infrastruc-ture	Has there been an upgrade or new infrastructure, road or transportation project in the area?
Services	Has there been a change in the ownership, number and nature of small business-es in your ward? Has there been a decline of locally owned stores?

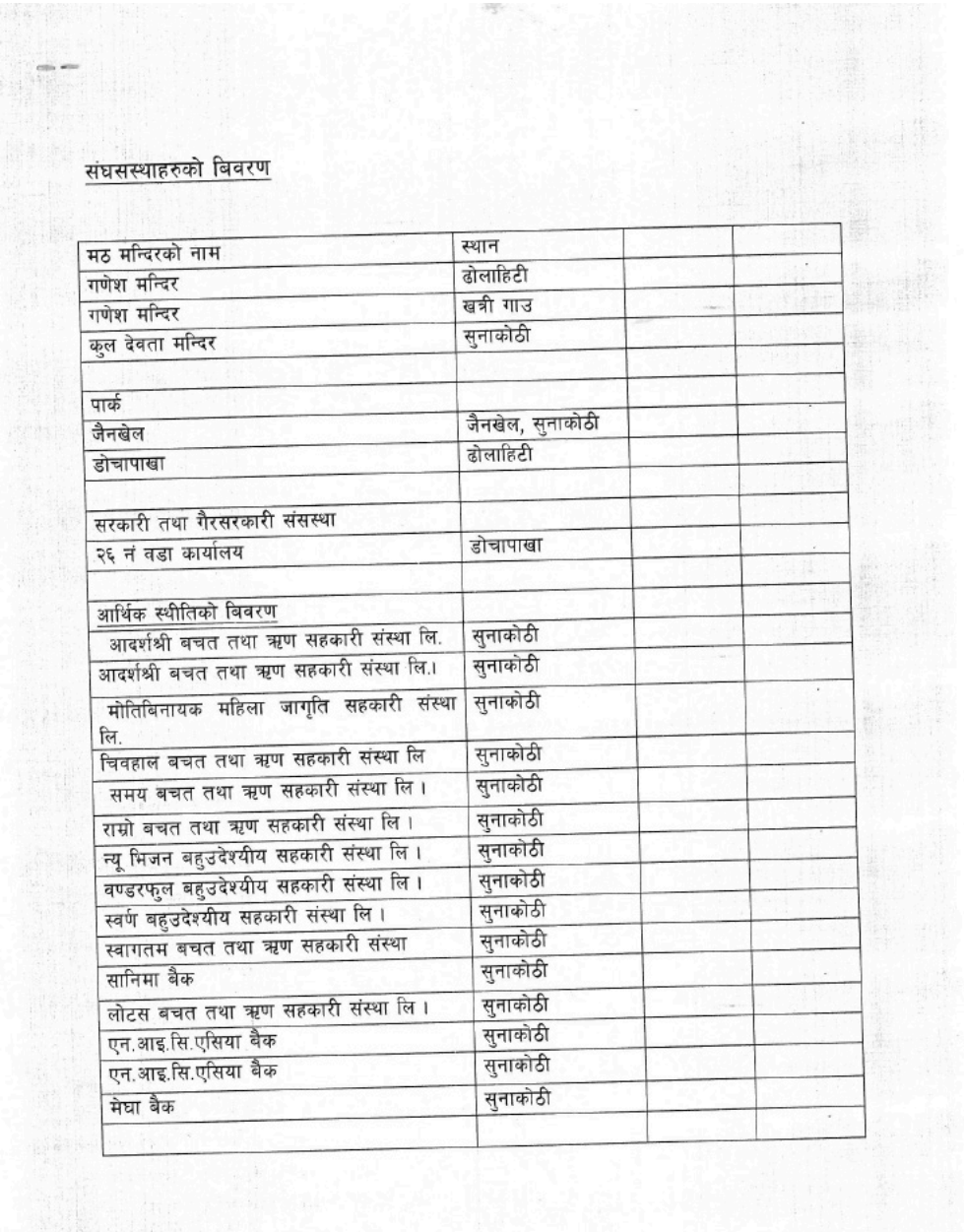
Ward profiles:

Ward no. 2 profile scans -

	साथ	झम्सिखेल	कितिसमा कार्की	6200083
	राष्ट्रिय लधु उध्यमी महासंघ नेपाल	गुसिगाल		
	जिल्ला विकास समिति महासंघ	गुसिगाल		
	धाँसी नेपाल	गुसिगाल		
	परिचय समाज	गुसिगाल		
	INGO Mercy Corps	सानेपा		
	INGO Stiengthing the Rule of low & human Right Protection system Nepal	सानेपा		
	INGO VDS voice of children	गुसिगाल		
	NGO COID			
	NGO USASD Nepal	सानेपा		
	INGO SPC BN	सानेपा		
	INGO CPP	सानेपा		
	DBC Media action	सानेपा		
	UNESCO	सानेपा		
	GIZ Health Sector Support Programme	सानेपा		
	INGO ACF Inernational	सानेपा		
३	टोल सुधार समिति	ठेगाना र टोल	प्रमुख व्यक्ति	सम्पर्कक नं.
	किरण भवन		रमा आर्चाय	9841485277
	डोखाडोल क्षेत्र सुधार समिति	डोखाडोल	ईश्वर रत्न शाक्य	9843077327
	विजय नगर	विजय नगर	रुद्र प्र. जोशी	9851077656
	इन्द्रायणी टोल	इन्द्रायणी	राजेन्द्र थापा मगर	9841801911
	सानेपा साँचल		पुष्प महर्जन	9851040775
	सत्मांग विकास	सत्मांग	प्रकाश हमाल	9841360610
	सुन्दर टोल	साँचल	आशा काजी डंगोल	9849532123
	विजय बस्ती		पमिर तिमिल्सिना	9841193464
	सानेपा चोक	सानेपा	सुपेन्द्र विष्ट	9803984970
	गुसिगांल टोल	गुसिगांल	गोपाल बहादुर तण्डुकार	9741167584
४	टोल विकास संस्था	ठेगाना र टोल	प्रमुख व्यक्ति	सम्पर्कक नं.
५	महिला समुह	ठेगाना र टोल	प्रमुख व्यक्ति	सम्पर्कक नं.
१	सृष्टि महिला समुह	साँचल	पारु डंगोल	9851166388
२	इन्द्रायणी महिला समुह	इन्द्रायणी	मैयां राना मगर	
३	साहसी महिला समुह	सानेपा	अन्जली हमाल	9841626691
४	झम्सिखेल महिला समुह	झम्सिखेल	एका लक्ष्मी थापा मगर	9843761891
५	हाकुपटासी महिला समुह	राजतिर्थ	कृष्ण देवी महर्जन	
६	सानेपा हाईट महिला समुह	सानेपा हाईट	लक्ष्मी महर्जन	9841194641

Ward no. 16 profile scans -
Link here

Ward no.26 profile scans-



संघसस्थाहरुको बिवरण

मठ मन्दिरको नाम	स्थान		
गणेश मन्दिर	ढोलाहिटी		
गणेश मन्दिर	खत्री गाउ		
कुल देवता मन्दिर	सुनाकोठी		
पार्क			
जैनखेल	जैनखेल, सुनाकोठी		
डोचापाखा	ढोलाहिटी		
सरकारी तथा गैरसरकारी संसस्था			
२६ नं वडा कार्यालय	डोचापाखा		
आर्थिक स्थीतिको बिवरण			
आदर्शश्री बचत तथा ऋण सहकारी संस्था लि.	सुनाकोठी		
आदर्शश्री बचत तथा ऋण सहकारी संस्था लि.।	सुनाकोठी		
मोतिबिनायक महिला जागृति सहकारी संस्था लि.	सुनाकोठी		
चिवहाल बचत तथा ऋण सहकारी संस्था लि	सुनाकोठी		
समय बचत तथा ऋण सहकारी संस्था लि।	सुनाकोठी		
राम्रो बचत तथा ऋण सहकारी संस्था लि।	सुनाकोठी		
न्यू भिजन बहुउदेश्यीय सहकारी संस्था लि।	सुनाकोठी		
वण्डरफुल बहुउदेश्यीय सहकारी संस्था लि।	सुनाकोठी		
स्वर्ण बहुउदेश्यीय सहकारी संस्था लि।	सुनाकोठी		
स्वागतम बचत तथा ऋण सहकारी संस्था	सुनाकोठी		
सानिमा बैक	सुनाकोठी		
लोटस बचत तथा ऋण सहकारी संस्था लि।	सुनाकोठी		
एन.आइ.सि.एसिया बैक	सुनाकोठी		
एन.आइ.सि.एसिया बैक	सुनाकोठी		
मेघा बैक	सुनाकोठी		

Key points from focus group interviews with ward administrators:

Ward no.2:

Date: 28/12/2022

Participants:

Shri Rajesh Kumar Maharjan (4-5 years in employment with the ward office)

Shri Sanjaya Shakya

A representative from the statistics department for the ward (Names - NA)

A representative from the women's welfare department (Names - NA)

	Question
Ownership	What is the ratio of rented or owned households in your ward? Has there been an increase in home ownership or renting in your ward since the earthquake?
Answer	50-50 ratio of home ownership and rent, there has been an increase in renting since the earthquake. Particularly, the number of INGOs had increased.
Rent Value	Has there been an increase in median rent for a family home in your ward since the earthquake? What is the median rent value?
Answer	There has been a 10 - 15% increase in rents, about a 5000 npr increase in room rents
Land Value	Has there been an increase in land value in your ward since the earthquake?
Answer	Yes, even though it is all informal. Current prices are 60-70 lac per aana, as opposed to 30-40 lac per aana.
Demographic	Has there been a change in the income, race or nationality of the people who live in this ward since the earthquake?
Answer	Increase of about 20% of foreign aid workers after the earthquake. However, there is also a change in demographic of Nepalis, earlier they were Brahmins, not it is mostly people who have migrated in from other wards
Education	Has there been an increase in schools in the area since the earthquake? Has there been an increase especially of international or private schools in the area?
Answer	1-2 new schools have come up. The presence of British School and Lincoln school is definitely a draw
Water and Sanitation	Has there been any upgrades in water and sanitation systems in the ward? Is there an issue with water access?
Answer	There is no issue with water access. Some INGOs and houses have dug their own borewells.
Livelihoods	Has there been a change in job opportunities in the area? What kind of jobs are being offered and who is getting hired?
Answer	Both local and INGO jobs have increased. With Covid, foreign presence decreased, but then local Nepalis got hired into the same jobs.

Infrastructure	Has there been an upgrade or new infrastructure, road or transportation project in the area (since the earthquake, with international funding)?
Answer	There was investment in the Siddhivinayak -Gwarko flyover, but that investment has stopped. Additionally, part of the Ring Road, funded by the World Bank, passes through Ward 3 and is used to transport into Ward 2
Services	Has there been a change in the ownership, number and nature of small businesses in your ward?
Answer	Increase in small businesses, but also increase in number of big shopping marts such as Big Mart

Ward no 16:

Date: 06/01/2023

Participants: Sudananda Dakhawa

	Question
Ownership	What is the ratio of rented or owned households in your ward? Has there been an increase in home ownership or renting in your ward since the earthquake?
Answer	
Rent Value	Has there been an increase in median rent for a family home in your ward since the earthquake? What is the median rent value?
Answer	It was around 20 k before the earthquake and now it is around 22k for a 1bhk apartment. However, right after the earthquake, rent prices immediately dropped as people vacated from high risk buildings
Land Value	Has there been an increase in land value in your ward since the earthquake?
Answer	Land value has increased drastically, especially near Patan Durbar Square (the historic central palace square)
Demographic	Has there been a change in the income, race or nationality of the people who live in this ward since the earthquake?
Answer	The number of AirBnB's in the area has increased drastically. Many damaged historic buildings have been converted into AirBnBs by either UNESCO or private investors. Rather than long term residents, there has been an increased tourist presence in the area. However, that too drastically decreased during covid.
Education	Has there been an increase in schools in the area since the earthquake? Has there been an increase especially of international or private schools in the area?
Answer	There has been no change in the number of schools in the area after the earthquake
Water and Sanitation	Has there been any upgrades in water and sanitation systems in the ward? Is there an issue with water access?

Answer	Some reconstruction funds were used to upgrade the water infrastructure in the area after the earthquake
Livelihoods	Has there been a change in job opportunities in the area? What kind of jobs are being offered and who is getting hired?
Answer	
Infrastructure	Has there been an upgrade or new infrastructure, road or transportation project in the area?
Answer	There are routine maintenance works, but no funding of new infrastructure.
Services	Has there been a change in the ownership, number and nature of small businesses in your ward?
Answer	There hasn't been a change in ownership, but several shops have started catering more to foreign tourists rather than the local artisanal items they used to sell

Ward no. 26:

Date: 04/01/2023

Participants: Jagat Bahadur Katuwal

	Question
Ownership	What is the ratio of rented or owned households in your ward? Has there been an increase in home ownership or renting in your ward since the earthquake?
Answer	It is a 50-50 ratio of rents to homeownership. There has been no change in the mix since the earthquake.
Rent Value	Has there been an increase in median rent for a family home in your ward since the earthquake? What is the median rent value?
Answer	There has been a 10% rate increase in the rent value of apartments.
Land Value	Has there been an increase in land value in your ward since the earthquake?
Answer	There has been an astronomical change in land value, since land markets are operating informally. Land is now 50-60 lacs per aana
Demographic	Has there been a change in the income, race or nationality of the people who live in this ward since the earthquake?
Answer	No major change, except there are internal migrants from outside Kathmandu who are coming in to live here
Education	Has there been an increase in schools in the area since the earthquake? Has there been an increase especially of international or private schools in the area?
Answer	We have 1 government school and 9 private schools in the area
Water and Sanitation	Has there been any upgrades in water and sanitation systems in the ward? Is there an issue with water access?
Answer	There is a huge problem with water access in the area, we only get water 2 hours a day. No change since the earthquake.

Livelihoods	Has there been a change in job opportunities in the area? What kind of jobs are being offered and who is getting hired?
Answer	Migrants from rural villages of Nepal are starting to buy property and work in Sunakothi. There hasn't been an increase in jobs, and most people go to the inner city to work
Infrastructure	Has there been an upgrade or new infrastructure, road or transportation project in the area?
Answer	No change since the earthquake
Services	Has there been a change in the ownership, number and nature of small businesses in your ward?
Answer	Not really

Interview List from random sampling:

Ward no. 2:

Interview 1: Satya Sharma, Manager, Casa Mexicana | Interviewed on 31/12/2023.
Interview 2: Jitbahadur Saru, Manager, Black Pepper restaurant | Interviewed on 31/12/2023
Interview 3: Monica Shrestha, Manager, Nina and Hager grocery store | Interviewed on 31/12/2023
Interview 4: Santakumar Thapa, KNY restaurant, khaja ghar | 31/12/2023
Interview 5: Samjhana Gurung, Grocery store manager | 31/12/2023

Ward no.16:

Interview 1: Sudananda Dakhawa, Politician and store owner | Interviewed on 06/01/2023
Interview 2: Kundema Mystery Navraj , Machine store operator | Interviewed on 06/01/2023
Interview 3: Helena and Aadil, artists at Kaalo 101 | Interviewed on 9/01/2023
Interview 4: Shanti Shrestha, manager, Newa Chen | Interviewed on 9/01/2023
Interview 5: Jivan Dai, manager, Café Swotha | Interviewed on 9/01/2023

Ward no.26:

Interview 1: Sanjana, grocery store owner | Interviewed on 04/01/2023
Interview 2: Krishneswori, grocery store owner | Interviewed on 04/01/2023
Interview 3: Namrata, garment store owner | Interviewed on 04/01/2023
Interview 4: Pushpa Sunar, Centre head, Euroschool | Interviewed on 04/01/2023
Interview 5: Jagat Bahadur Katuwal, Ward Officer | Interviewed on 04/01/2023