
Research Paper

Climate change as a regulatory instrument to mitigate social constraints

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Abstract

Narratives of spatial contestations have shifted from the socio-cultural-economic-political centric appeals to Climate contestation. Climate contestation gives way to a plethora of tempestuous responses, that span out in the form of physical and transition risks. The former in most cases is unavoidable, resulting in a coercive mode of climate displacement. Predicted sea level rise, shifting seasons, extreme and frequent heat waves and other forms of natural hazards have questioned the near future liveability of certain locational settings. But transitional risks are a more policy centric, actionable, and conscious move towards creating a state of exception descending into forecasted climate vulnerability.

To curb the climate crisis, a multitude of policy frameworks have been thrust across global and national domains via agreements, agendas and summits that are more constraining than adaptive. Under the burden of Policy constraints only a fraction of the population would be able to transition, or rather afford the transition. This correlates the question of climate contestation to climate injustice, where the marginalised get affected even though their contribution to the crisis is minimal.

The paper seeks to address methods through which, the climate crisis does not become a social compromise. With transition and physical risks as the protagonists of plural narratives, risk inclusivity should be an adjunct to any form of policy changes to have favourable outcomes. The analysis and strategization necessary to combat transition and physical risk should be bottom up, participatory and community driven to escort more local agency in future proofing. The climate change battle seems to be dominated by protocols, agreements and policies that pay little or no heed to the concept of just transitions. The proposal therefore hinges on the very alternative, it aims at collective community driven change one parcel at a time to create a ripple effect across Local Climatic Zones (LCZs). It negates legal and administrative boundaries and focuses instead on neighbourhood and locality-based citizen initiatives. It aims at an equitable framework approach that questions and involves inclusivity at the policy level through case studies. Localising the global therefore becomes the defining parameter for adaptability of the social segment prone to climate vulnerability.

Keywords

climate contestation, vulnerability, transitions, risks

1. Introduction

Space is a consequence of calamity. An aberration that climate change has enhanced and reminded us of. Discussion surrounding the topic have escalated from change to crisis. Prolonged seasonal shifts, increase in sea water levels, increase in emissions, exponential rise in natural hazards, to name a few. We are no longer going through a state of climate change, we are amidst a crisis. A crisis that, however, like most crises, have disproportionate impacts. That leaves a rather large segment of the population vulnerable to the impacts of climate change compared to the activities of the segment that majorly contribute to it. It fuels food crisis, affects liveability conditions and livelihood opportunities, affecting settlements that are already part of the lowest economic segments.

The Vulnerable 20 group, a coalition of the countries that are most affected by climate change, was formed as a response to the lived and predicted impacts faced by them economically. The top-down nature of the climate crisis approach has had little or no effect on the jeopardised communities who are facing aggravated impacts daily. Marginalization at a global level has been aggravated with respect to relative levels of responsibility and contribution towards the climate crises. It has sparked disagreements between the northern and southern countries with regards to the inequalities reinforced towards the crisis scenario. The distribution of cumulative emissions represents the perspective of the global south. The largest share of global cumulative emissions is borne by the United States at 25% of historical emissions. China ranks as the second largest contributor, but its global emissions are 50% of the United States' contribution. The European Union has had a historical contribution of 22%, while the current large annual emitters such as Brazil and India have not been large contributors in the historical context. Africa's contribution, when compared to its population, has been low both historically and in the present day (Ritchie, 2019).

The disproportionate nature of affect requires policies to understand the need for equitable measures. Current policies revolve around approaches that are non-scalable and limiting. They rely on restrictions instead of conformities. Cities are adopting policies that planning practices have not imbibed yet. They exist in multiple derivatives without enough overlap at the master planning level. A heat action plan, a risk and disaster management plan, a plantation plan, a coastal vulnerability mitigation plan etc, but they still exist as isolated entities not contributing to the entirety of the solution.

A top-down effect has still helped in achieving climate transparency and made the larger contributors accountable for their actions. Though, at this point a huge segment of actions are voluntary and not legal, this has managed to stir up conversations that are sensitive and morally bound. Understanding the importance of local economies, circularity, walkability has contributed immensely to discussions of climate injustice as a driving social concern. The alternate is again that the discussions are mainly verbal and not supported by action. The lack of demonstrated solution hence becomes another serious concern. Signatories and agreements can only do so much. The absence of on-ground implementation and consistent measurable outcomes is key towards ensuring targets are met.

2. Background

2.1. Evolution of Spatial Contestations

Bourdieu defines class as a group of individuals that shares a common nature and the same external living conditions. Historically spatial contestations between different sects of people emerge from grouping people based on ethnicity, religion. social norms, cultural diversity etc. Which eventually shifted towards economic anomalies. The current trend adds the layer of environmental vulnerability to social positions. The same social position will result in the same or similar living conditions, thus shaping a

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similar class habitus (Liu 2003). Class line clashes to plot line clashes has now embarked upon to ecological feud.

Most people affected by climate change relocate inside the borders of their native countries, typically from rural to urban regions after losing their homes or means of subsistence due to drought, rising seas, or other natural disasters. People are increasingly being pushed to traverse international borders in search of safety since cities are also dealing with their own climate-related issues, such as rising heat and water scarcity. But under the 1951 Refugee Convention, which only offers legal protection to persons escaping persecution because of their race, religion, nationality, political opinion, or membership in a certain social group, climate migrants are not granted refugee status.

Thus, climate migration has already begun to result into loss of socio-cultural practices, knowledge, and way of life. Yet the world has yet to formally acknowledge climate migrants or devise methods for identifying their needs and aiding them

Vulnerabilities occur from stresses that go beyond environmental inequalities. They stem from institutional frameworks that have been constructed in such a way that systemic inequalities percolate and make it socio-economically explosive. The differences in coping mechanisms are getting further reinforced due to top-down structural approach. Communities that are least responsible for climate change also have the least robust systems in place to combat it. Limited capital, low adaptive capacity, weak infrastructural backing, housing in areas prone to increased environmental degradation and accelerated loss of livelihood options, to name a few. Climatic inequalities add on to their list of already existing vulnerabilities. The intersection of social injustice, that is already borne by the marginalised, along with adverse climate change impact, presents a climate injustice scenario that dispels the idea of equity.

2.2. Physical and Transition Risks

Physical and transition hazards are the two threats associated with climate change. The risks associated with transitioning the economy away from fossil fuels are different from physical hazards such as wildfires, hurricanes and floods. Physical dangers may be sudden or built up over time. Risk of increased catastrophic weather and climate events has significant impact on economic operators. Along with progressive climate changes that will increasingly affect crop yields, lower labour productivity and damage ecosystems, there are also the chronic responses to temperature increases, sea level rise, ocean acidification amongst others. Unprecedented systemic risk is part of the physical dangers associated with climate change as crossing environmental tipping points would have devastating effects on both the world economy and social life associated.

Then there are the hazards associated with the transition as the economy shifts away from using carbon-based energy and toward net zero carbon. Businesses, families, and governments at all levels should alter their daily actions in response to a changing environment. Businesses will need to change the way they produce things to use carbon-free technologies, and communities that depend on carbon-intensive industries for their economic well-being will need support.

Although the immediate effects of climate change are local, they can spread to other areas and industries due to the interdependence of socioeconomic and financial systems. Physical and transition risks question the concept of socio-spatial with renewed ardour. The oppressive quality of geographical proximity associated with climate impacts creates stark inequalities amongst social groups. Spatial inequality is a result of climate risk as it might be beneficial for certain areas while harming others. The most vulnerable groups tend to be the localities and populations with the lowest incomes.

2.3. History of Summits

Climate change has always been a global agenda, climate related summits have played a key role to initiate global dialogues that affect the local. Following is a brief overview on few such key summits:

Montreal protocol

The Montreal Protocol establishes distinct timeframes for wealthy and developing nations to gradually reduce consumption and production of various Ozone Depleting Substances (ODS). All parties to this agreement are required to fulfill particular obligations connected to the phase-out of various ODS groups, trade regulation, yearly data reporting, national licensing frameworks for ODS import and export regulation, and other issues. Equal but distinct obligations apply to both developing and industrialized nations, but most significantly, both sets of nations have concrete, time-bound commitments that are legally enforceable.

Paris Agreement

The deal is an amalgam of the "bottom-up" Copenhagen and Cancun agreements with the "top-down" Kyoto strategy. All nations are subject to shared, binding procedural obligations, but each is free to choose their own, nonbinding "Nationally Determined Contribution" (NDC). The agreement asks on countries to strengthen their NDCs every five years and sets a framework for increased transparency to monitor countries' actions.

Sustainable Development Goals (SDG)

The 17 Sustainable Development Goals (SDGs) are an urgent call to action for all nations—developed and developing—in a global partnership. SDG 13 which clearly states to take urgent action for combatting climate change and its impacts has set certain global targets. 13.1 talks about strengthening resilience and adaptive capacity to climate-related hazards and natural disasters in all countries. 13B focusses upon promotion of mechanisms for raising capacity for effective climate change-related planning and management in least developed countries and small island developing States with an emphasis on women, youth, and local and marginalized populations.

Although the global initiatives have been somewhat successful in unifying most of the nations on the issue of climate change, the top-down approach of these summits frequently prevents the localization of major objectives from reaching the vulnerable areas. Additionally, because many of the choices made at these summits are voluntary actions that must be adopted by the various national governments, it is not a well-regulated system that guarantees the conclusion with certainty.

2.4. Localizing Global Agendas through indicators

Climate change indicators play a significant role in contextual determination of threats. Atmospheric moisture changes are indicative of predictive flooding, increase in rainfall and changes in ground water table levels. Long term seasonal shifts are associated with temperature changes, increased frequency of extreme events and natural calamities. Sea level rise resulting in coastal flooding is responsible for severe climate displacement for vulnerable coastal communities. Change in wind direction is another indicator that results in increased susceptibility to disasters and hazards. Desertification is the consequence of major drought spells, heat waves accompanied by sharp decline in water tables. However, the two indicators that have not made it to the forefront are the catalytic effects of Pollution and Biological impact in accelerating climate change. The importance of pollution and climate acting together to worsen climate change through deposition in pollutants and precipitation. Pollution is still treated as a starkly

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different phenomenon through policies instead of overlapping with policies that tackle climate change. While pollution is still considered as a climatic event at a superficial level, biological agents as agitators are hardly addressed. Prolonged seasonal shifts give rise to proliferation of invasive species, decline in existing ecosystems and inflation of diseases. The impacts of biological agents on social life, liveability and livelihood are not deliberated enough to be incorporated in instrumental frameworks.

Taking the case of Delhi Electric Vehicle (EV) policy in relation to climate change, the contrast of transformative guidelines without sufficient consideration to all socio-economic spectra becomes evident. Unless this paradigm shift is supported by a boost of civic infrastructure, a considerable segment of the population would be devoid of travel means. This results in a two-fold prediction of crises scenarios. One which results in migration to areas closer to livelihood spaces affecting the land prices in certain economic cores. The second would stem from the lack of a well-planned battery waste ecosystem residing at the peripheries that can result in ground water contamination. The peripheries in this context are not the suburbs, in fact they are indicative of regions that house the marginalised communities thus appropriating its adjacency to a waste centric establishment. The brunt of climate displacement borne by the marginal is almost equivalent to generational subjugation through climate slavery.

How, therefore is mobility perceived now? Cities are containers for life, and inclusivity should address it at all forms. The term transportation itself is exclusive in nature. Let us understand that a wheelchair dependent person is not using a “recognizable” mode of transport. Therefore, by categorizing modes as motorized, non-motorized, pedestrianized, we might be eliminating him from the platform of contributive citizens. The term “movement” therefore takes precedence here. It imparts a holistic sense that would involve stakeholders across all cross-sections. And to combine movement with safety, throughout all time frames, all genders and age groups and all inter-modal intersections. To ensure that accessibility is not time-bound or privilege-bound or circumstance-bound. Mobility is a representation of inclusivity, ownership and rights, and should be such for the subaltern as well. A shift from fuel-centric economy to Electric Vehicles does not address inclusivity unless alternatives are financially viable for every rung of the social ladder.

3. The case of Kishangarh and Vasant Kunj

3.1. Introduction, Site History and Context

Kishangarh is an Urban village of Jaats. The Village is located near Vasant Kunj in South West Delhi district of Delhi, India, on the hills of Aravali, between Mehrauli and Vasant Kunj. The term “Lal Dora” was used for the first time in the year 1908. These areas were marked by the land revenue department by tying a Red Thread around it, to make a boundary and to distinguish it from the agricultural land. Mehrauli was one such village. The urban villages of Delhi present a variety of environmental conditions. The urban context of Kishangarh is quite distinct, since it is located in a historically significant part of Delhi containing traces of three ancient imperial cities.

These settlements existed as rural villages prior to any planning intervention. After rapid urbanisation, they fell into urban areas, so they were renamed urban villages. The term ‘Urban Village’ was first coined in 1961 at the time of formulation of the Master Plan of Delhi. Urban villages in Delhi are protected habitation lands, which have been exempted from the urban development authorities and are not affected by any building by-laws.

3.2. Ecological Precincts

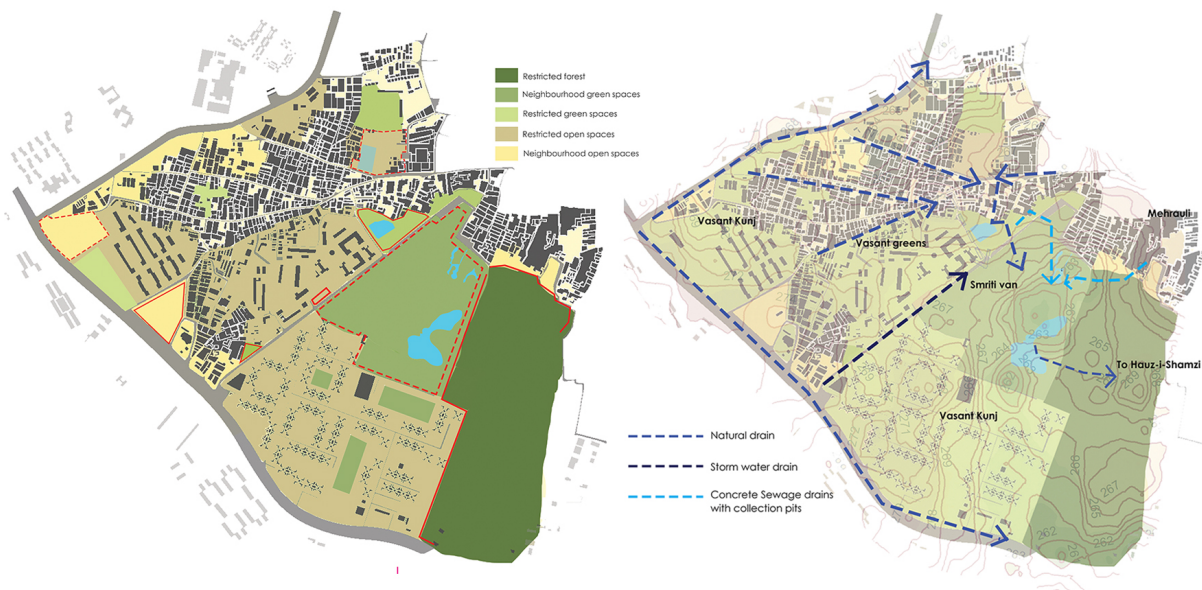


Figure 1 Ecological Precincts and Drainage Patterns. Source - SPA UD 2019 semester work undertaken by Shinjini Saha, Arkadipta Bannerjee, Ashwin S., Walsado Sangma and Insia Hasnain

There are several pockets of green in and around the ridges of South Delhi. It is believed to be a network of green space which then split up due to creation of political boundaries. Kishangarh village lies on the immediate periphery of the south-central ridge and has a close association with Sanjay van and Hauz Khas park with it holding a reserved forest in itself separating the settlement from Mehrauli. Smriti van is a local green space which is an important ecological asset of the area and its surroundings. The water body in Smriti van is the lowest catchment point in the area with natural drains leading to it through all the streets. Sewage lines are let into the water body from the Kishangarh village and Mehrauli area through concrete drains and a catchment point screening solid effluent. The water body in Baba Lutaria Marg leading from Smriti van to Gaushala mandir acts as a local catchment area with stagnant water. Storm water drains under walkway can be found along Vasant greens and Vasant Kunj area leading to Smriti van while the water from Smriti van flows into Hauz-i-Shamzi in the east. There is a noticeable pattern in the dynamics of ecological precincts and the socio-economic grouping associated with it.



Figure 2 Built and Open Space Structure. Source - SPA UD 2019 semester work undertaken by Shinjini Saha, Arkadipta Bannerjee, Ashwin S., Walsado Sangma and Insia Hasnain

3.3. Social Linkages

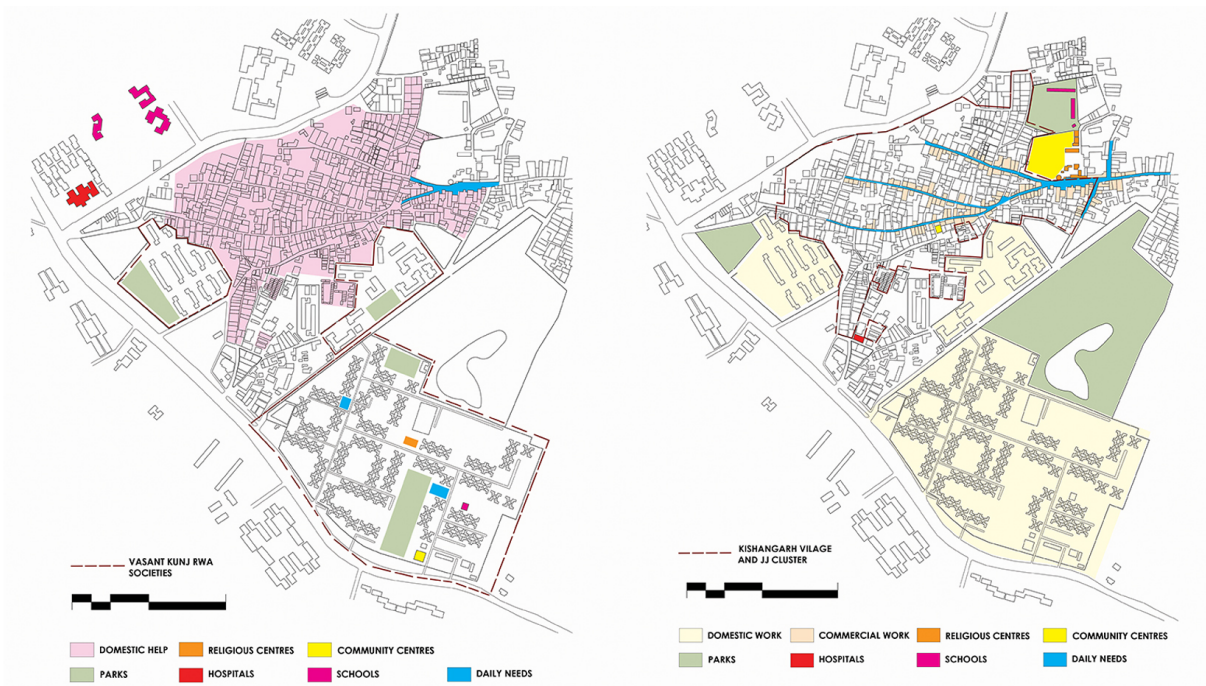


Figure 3 Social Linkages. Source - SPA UD 2019 semester work undertaken by Shinjini Saha, Arkadipta Bannerjee, Ashwin S., Walsado Sangma and Insia Hasnain

Kishangarh and Vasant kunj functionally serve as residential zones with regional forests and the Smriti Van as the main green zones. The Gaushala Mandir with the Gaushala (cow-shed) functions as the major religious zone for the entire area. The primary activity generators of the area include the shops along the road which pivots itself as the commercial spine. The Gaushala Mandir precinct generates both

commercial and religious activity while recreational activity is primarily associated with Smriti Van. Kishangarh village and Vasant Kunj societies have different live-work-play patterns due to their spatial organization. The lack of space in Kishangarh village has resulted in the streets being used as communal gathering spaces while Vasant Kunj has specific areas segregated for each activity. Vasant Kunj residents use the parks for communal gathering, but the central courtyards are seldom used. Gehri residents on the other hand use their front yard for all domestic activities such as preparing food, washing utensils, social gathering and playing. There are no significant zones of overlap between the three residential groups i.e. Kishangarh, Vasant Kunj and Gehri but interdependencies amongst them are still strong. Due to the heterogenous nature of the community, there is no specific space designated as a community centre. The mostly functional as nodes of activation depending on the typology of activity such as celebratory, cultural, political or religious significance. Certain amount of segregation is still prevalent in the sharing of the social spaces, which is noticeable in the absence of the Gehri residents in the activities undertaken by Kishangarh and Vasant Kunj.

3.4. Movement and Activity Patterns

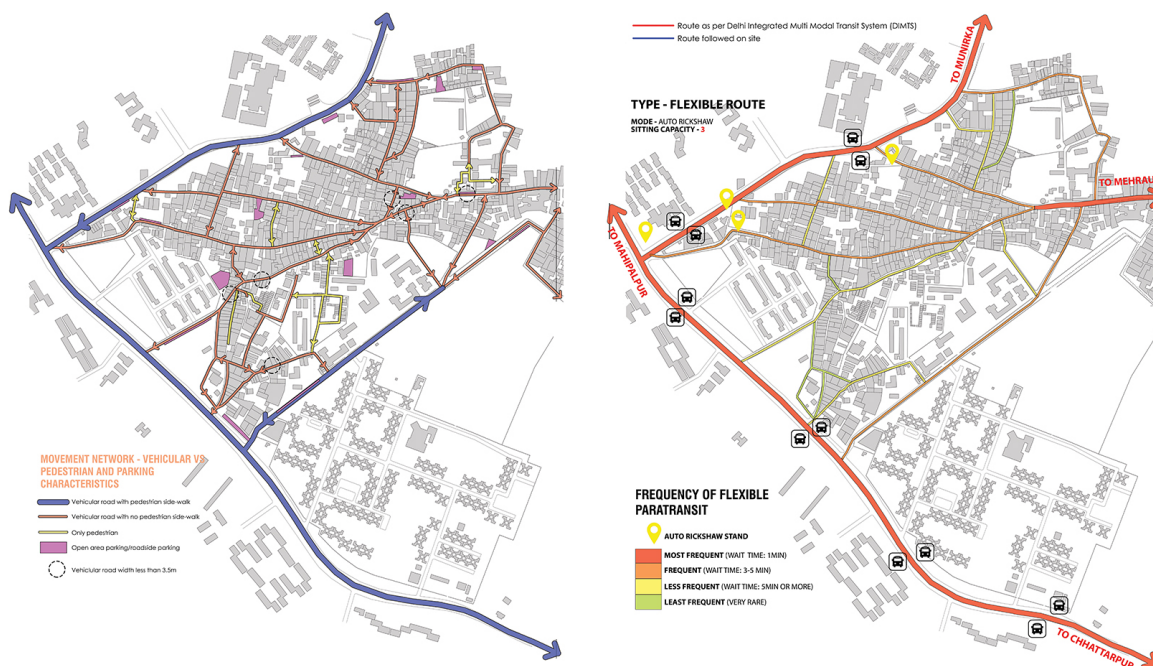


Figure 4 Movement Networks. Source - SPA UD 2019 semester work undertaken by Shinjini Saha, Arkadipta Bannerjee, Ashwin S., Walsado Sangma and Insia Hasnain

Major transit nodes are quite peripheral to the site setting, especially vehicular movement. The fixed vehicular routes such as bus routes, paratransit routes and metro connectivity must be availed through the arterial roads. While Vasant Kunj is built to accommodate vehicular traffic, Kishangarh village does not have the road width for comfortable vehicular access. This results in another layer in segregation with respect to access and accessibility and the adaptation of a flexible route paratransit solution across the inner street networks that cater to the transport gap informally.

Movement however is also strongly associated with frequency and safety of the concerned routes. While the peripheral roads are lined with sufficient lighting and frequent access to bus, metro and fixed paratransit availability, the inner roads are associated mostly with blind spots, dark spots and longer wait

times between transportation options. Hence, they are strongly dependent on activity patterns revolving around informality for their activation and safety, such as Gaushala Mandir aarti (morning and evening religious rituals), informal market economy and hawkers to name a few. The reliance on these everyday activities to impart a sense of safety to the zone is unique to the Kishangarh village and not present in the Vasant Kunj societies. These activities are not preferred by the residential societies since they create conflict in vehicular and pedestrian traffic during peak hours.

4. Analysis

There is a noticeable pattern in the dynamics of ecological precincts and the socio-economic grouping associated with it.

- The distribution of open spaces shows stark differences as per the group associated with it;
- The size of the open space adjacent to each group;
- All open spaces are not green and therefore ecological degradation has an associative quality with each group.

Vasant Kunj residents have larger open space density compared to Kishangarh village while the population size residing there is significantly lower. Vasant kunj also has more green spaces with controlled porosity and accessibility to it. The spaces are bound to ensure that only the population residing within the societies can use it. The open spaces placed adjacent to Kishangarh and gehri settlements are selectively green and derelict in nature. They are used mostly as dumping grounds and waste disposal areas compared to the ornamental greens that Vasant Kunj enjoys. The village and gehri settlements also areas prone to flooding due to them lie alongside the natural drainage pattern of the historical water system making these population more vulnerable to seasonal shifts. The distinct association of vulnerable ecological landscape, distribution and accessibility to social and physical infrastructure is indicative of how climate injustice is noticeable in settlement patterns.

4.1. Addressing boundaries beyond legal and administrative borders

There is a need to understand ecological extent and the importance associated with it. Legal and administrative boundaries are constraining in their approach towards holistic redressal of environmental limits. Water systems do not shift their behaviour while crossing legal or administrative boundaries. Flooding impacts are felt irrespective of the boundaries used to address them at various levels. Climate risks show up locally. Thus, it is necessary to comprehend the direct effects of physical climate risk within the framework of a geographically specified area. The risks are independent of governance centric boundaries; areas within same country or city can have different levels of risk.

4.2. Demonstrated leadership at local level

Based on climate vulnerability. Areas prone to flooding are occupied by the socio-economically backward segments. Quality of life in general is different across physical locations. It is hence necessary to understand the juxtaposition of external versus internal incentivisation. Demonstrated leadership and/or stewardship should take precedence over regional initiatives that are top down and not noticeable on site. To make an area climate ready, the importance of local agency and hence creating local awareness should not be undermined. The societies surrounding it should have the opportunity to become environmental caretakers. To guarantee the achievement of a broad objective, it is necessary to distribute the workload among skilled local representatives. After all, having a sense of belonging is crucial for comprehending the situation and developing effective solutions.

4.3. LCZ Approach

The Local Climate Zone strategy in urban planning must rely on communication and cooperation between governing authorities, technology, and local customization to effectively mobilize context-specific climate initiatives. Parcel based initiatives that understand the needs of the citizens inhabiting the space and their requirements to transition towards climate proofing the zone. Policies are not necessarily realised on ground due to the lack of communication and disability to convert them to actionable outcomes. Hence it is important to address contextual narratives instead of sweeping global agendas and policies that play little or no role in just transitions.

5. Conclusion

Cities are mosaics of manufactured and lived identities. Identities that are swiftly running the risk of coalescing into nothingness, through movement, through stillness, through predicted decay. The projections of socio-spatial justice have shifted from an argument of legality to accommodate the overwhelming indices of climate injustice. Climate contestation is generational unless addressed otherwise. Ecological resistance is not the way forward since the cyclic nature of degradation will affect every segment of the society but at different time scales. The solution is hence to utilize the opportunity to create a common ground. Climate change could become an opportunity to equalize and form a more unified social segment that can transition to a more sensitive outcome instead of creating fractures in the society.

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