

Exploring *the Art* *of **Deep*** ***Mapping***

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'Deep maps are not confined to the tangible or material, but include the discursiveness and ideological dimensions of place, the dreams, hopes, and fears of residents – they are, in short, positioned between matter and meaning.' (Bodenhamer, Corrigan and Harris, 2015)

Deep mapping, while subjective, is a tool to record anecdotal information. Different formats of narratives - for example, sound, smell, conversations - can be layered for a more holistic and expansive take on a location. In my project, *Kaygari Kaaran* (pronounced *kaiguri kaa-ran*, meaning vegetable vendor in Tamil), interviews, photographs, and maps were the building blocks to understand how deep mapping through citizen sensing might be a possible solution to mapping street vendors in the city. The intent was to build a map through a collection of narratives shared by vendors.

Street vendors form a small distribution network of goods and services throughout the city - from individuals who have permanent set-ups along the pavement, to those who traverse the city. Through conversations, much of the vendors' daily work routine in the city is captured. For this project, the context studied was Domlur locality in Bengaluru. Domlur is primarily a residential area with a software park at its centre. The residential area is a mix of single housing and paying-guest houses. As the neighbourhood is well-connected due to a six-lane road that stretches for 10 kilometres, the footfall and traffic increases drastically at rush hour, from 10am to 11am and 8pm to 9pm. The peak traffic is helpful for the vendors moving by foot, as well as for the pop-up and fixed set-ups that are located all along the street.



Figure 1. Charcoal rubbings of a sidewalk in Indiranagar locality, Bengaluru

Mapping Domlur. Vendors' calls give context to the neighbourhoods that they visit daily through their language, vegetables sold, and points at which they sell goods. For example, this is a translated excerpt from a vendor's call in Ashok Nagar, Chennai, 'Greens, greens. Mint, coriander, green chillies, lime, ginger, green plantain, plantain flower, plantain stem. Greens, greens.' This vocal call was distinct from those heard across Domlur where calls are now automated and played over speakers. But what does a vendor's call have to do with the city? In fact, how do observations around daily life reflect the spatiality of a place?

'Human action and meaning do not straightforwardly occur within space; space is co-constitutive of those very actions. Space is multiple and complex, already inscribed with meaning, and generates relations as much as it "houses" them' (Engel, 2018 : 217). Deep mapping is something that architects do regularly in their professional work. Some of the questions that architects routinely engage with include - What does a plan convey? How can activity be depicted? If every piece of information about an experience of a place is collected and declared relevant to the study of a place, how does one classify and express this data on a map?

How does one capture the intangible? A deep map simply uses the format of a map (a two-dimensional diagrammatic representation of physical features) to showcase contextual spatial narratives. Deep mapping starts with the most basic questions - Did something happen here? What do people do here? How do I feel when I walk around this location? How do the answers to these questions correlate?

A deep map can be used to capture minute details about a place, compiling its frequency of occurrence, the spatiality of the detail, and its correlation to other details and the place. The intent of the map is to share such happenings and layer them to understand the place better. Intentionally, the map should convey more than the popular narratives of the location. Drawing from personal anecdotes and encounters, deep mapping can be an act of recounting the mundane. Thereafter, drawing and layering conclusions is done by creatively diagramming these observations on a map. The maps do not come to a conclusive end. The more perspectives added to the map, the more holistic understanding of a place.

Techniques. In this case, the study of Domlur did not begin with sound, nor did it end with it. It was a project whose focus became the street vendor and their experience of the city. They spend most of their time on the streets, weaving through traffic and potholes.

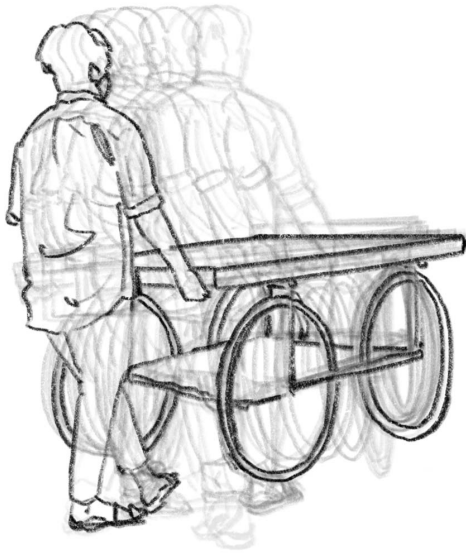


Figure 2. Street vendor parking his pushcart

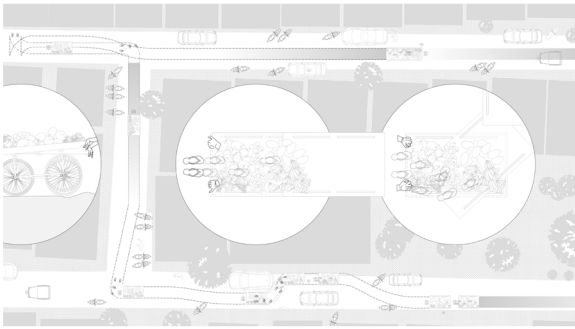


Figure 3. Mapping the movement of vendors in Domlur, Bengaluru. The street vendor's pushcart allows him to behave both as a vehicle and a pedestrian. The speed and flexibility of movement depends on the nature and location of the street

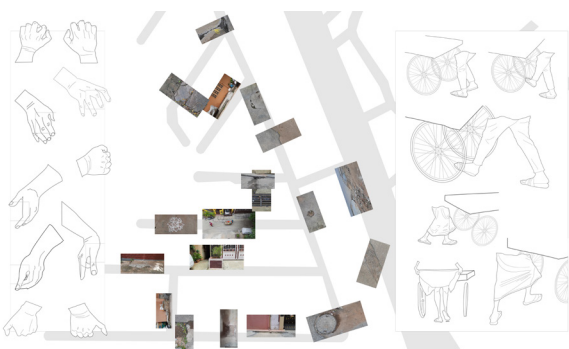


Figure 4. Mapping urban textures in Domlur, Bengaluru. The diagram represents the correlation of gestures to the landscape experienced by the wheel of the pushcart. It documents features of the road and highlights current conditions faced by vendors on foot

As footwear is the point of contact during the act of walking, the pushcart's wheel becomes an extension of their body. The push and pull of the cart is a method to navigate the city. The initial step taken for this project involved creating GIFs of the vendors parking their cart, making turns, and mapping the landscape of the wheel.

The Domlur deep mapping project took into account urban textures and infrastructure, gestures and movement patterns, sound and conversation, commodities and their daily routes to understand the larger narrative. Using a variety of techniques, creative mapping became a tool to better understand the location. When observing their routes and movements with their pushcart, the available urban infrastructure came to light. Potholes and slopes along their routes establish distances and effort taken by vendors to move through streets. Their daily routine was also peppered with chats at tea stalls and breaks during sales leaving the existing sidewalks and makeshift vendor setups perfect as a refuge. Further documentation of permanent vendors led to a visual dictionary of appropriated, temporary objects used to set up a small stall.

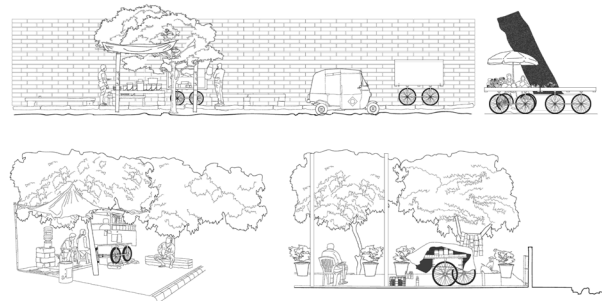


Figure 5. Permanent street vendors in Domlur, Bengaluru. The documented setups call attention to the temporal nature of the objects used. While useful in the scenario of shifting location, it has repercussions like theft. However, while a number of infrastructural solutions could be made, a turning point arrived during conversations with the street vendors. There are many moving parts to a vendors' interactions with their neighbourhood – the rain, rotting fruit, the community – forcing them to change how they navigate the city. In a conversation with Meena, a permanent vendor, she highlighted specific problems with regards to theft, vendor licence, and obstructions from the police. As a vendor's livelihood is reliant on their commodity and visibility, day-to-day interactions with the city are dynamic. 'Some days I do well, some days I do not. Today people did not come out due to the rain.' - Excerpt from translated transcript of an interview with a street vendor.

Outcomes. There can be further potential in collaborative deep mapping and citizen sensing that can provide a foundation for placemaking. During a workshop by Sensing Local, an urban design studio based in Bengaluru, the possibilities of GIS mapping were explored with the same data points that I had previously collected. The conversations with the vendors themselves held enough significance for a more focused participative mapping system. Using qGIS, an interactive map was created to document possible spots that have either an infrastructural or non-infrastructural problem. For example, public amenities, road conditions, seating, etcetera. Such data can be shared via SMS for use by vendors who can then navigate around possible problems in the neighbourhood.

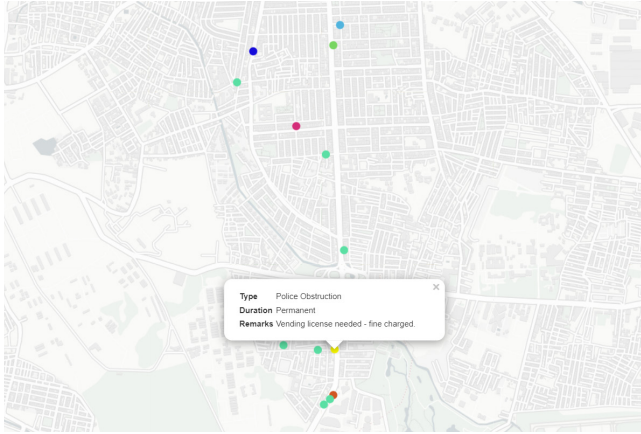


Figure 6. GIS map of Indiranagar and Domlur, Bengaluru. The map highlights specific problems such as road conditions, traffic, police obstruction, theft, shaded areas, infrastructure (street lights, surveillance equipment), public amenities (public toilets, drinking water, seating)

The Karnataka Street Vendors' Association have faced a number of problems with issuing vendor licence, misinformation, and police intervention. In order for this system to have an effect, it needs vendors to share information with other vendors. As long-term solutions involve decision-making by development authorities, funding, infrastructural and urban design resolution, simple interventions through citizen sensing can offer quick relief.

Problem points are plotted at a neighbourhood scale. They are time-bound issues for certain categories like police obstruction, traffic and theft. This information is offered as an SMS/ text-to-speech subscription from the database that is created through qGIS and linked to city ward information so as to make subscription to specific locations possible.

Moving Forward. Deep mapping is flexible with an open and iterative process. No observation is too small, and no perspective is irrelevant. However, it is clear that on a personal level, the craft may be subject to biases. As seen earlier, deep mapping is reflections of personal experiences of a location. The activity may shed light on vulnerable and invisible narratives that are not heard over the dominant narrative of place. The act of relaying occurrences may also invite a sense of intimacy with the community and help develop deeper connections with the place.

'Deep maps will be unstable, fragile and temporary. They will be a conversation and not a statement'

Clifford McLucas 'Deep Mapping', 2022

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