A Rehabilitation Proposal towards a Low Carbon Living Complete Street: A Case from Cairo

Marwa Dabaieh\textsuperscript{a}, Salma El-Banna\textsuperscript{b}\textsuperscript{*}

\textsuperscript{a} Dr. Marwa Dabaieh, British University in Egypt, marwa.dabaieh@bue.edu.eg
\textsuperscript{b} Architect. Salma El-Banna, American University in Cairo, Egypt, selbanna@aucegypt.edu

Abstract

Cairo is a vibrant city with chaotic car-dominated streets. There is an increasing number of traffic related deaths due to lack of properly designed safe pedestrian routes, and the sidewalks are used for much more than pedestrian transport. Informal activities like street vendors and cafes occupying part of pedestrian platforms are uncontrolled creeps that obstruct pedestrians and sometimes paralyze traffic. In addition, sidewalks sometimes act as an informal marketplace, a workshop, a billboard and a car parking lot. This study illustrates the challenge in introducing best practices and trends in the provision of high-priority and transformative initiatives for the right to a low carbon complete street in Cairo. The study tackles mobility and accessibility while addressing the invasive threat of informal street vendors and the phenomena of informal commercial activity. Furthermore, the study investigates the travel demand of drivers and determinants of possible shifts in travel behavior. The study employs a case study methodology and aims to suggest an alternative low carbon living complete street design proposal to effectively enhance street activities in Cairo. Tal’at Harb Street in downtown Cairo was chosen as a pilot case. The proposal covers sustainable smart mobility solutions with a main focus on pathways to increase locals’ usage of public and active transport. The study ends with recommendations for developing a framework for supporting effective investment decisions and implementing the design proposal as a pilot case. The researchers aim to improve awareness of the right to a complete street as a low carbon mobility practice.

Keywords: Street Vending; Living Complete Street; Low carbon; Smart Solution.

\textsuperscript{*} Salma El-Banna. Tel.: +2 01005670151
E-mail address: selbanna@aucegypt.edu
1. INTRODUCTION AND STUDY BACKGROUND

Cairo is one of the most dense capital cities in the Arab world with over 17 million inhabitants (CAPMAS, 2013). Over population in urban areas causes severe traffic congestion. Long queues of slow moving traffic have become more and more common in Cairo. Congestion will not only degrade the quality of the environment, but will also affect the quality of life negatively. Pollution, safety, and accessibility for users with special needs are some of the major challenges. Nevertheless the informal street vending phenomenon is widely spread and overtaking pedestrians zones and even some car lanes (fig.1). Limited facilities, poor infrastructure, an excessive number of vehicles, competing uses of road space, bad road management, and enforcement issues are all daily problems. In main commercial streets there are vehicles that circulate looking for on-street parking spaces, picking up/dropping off activities of buses, and even loading/unloading activities of goods as All of these on-street organised activities increase congestion. Extra travelling time causes more stress for drivers, passengers and pedestrians. Emergency services like ambulances, police and fire engines find it harder to function effectively. In order to develop a sustainable solution for streets in Cairo there is a clear need to integrate policies at the municipal level in order to prioritize the most urgent local activities and to categorize the required local human and financial resources. The number of private cars in Cairo is estimated to grow at an annual rate of 5.6 percent through 2022, which means that the number of cars will double every thirteen years according to a 2008 Nippon transport study (Nippon Koei Co. Ltd., 2008).

Despite Cairo’s potential to sustain proper, efficient, and cheap public transport relative to its density and compactness, private and informal transport systems have taken over (Sims, 2010). The bicycle is not seen as a viable option by middle and upper class citizens as it is only viewed as the choice of lower class labourers, such as delivery or bread distribution labourers. Added to that, streets in Cairo are not properly equipped for the safe use of bicycles, with practically no bike lanes and polluted air, which are some of various challenges that face bicyclists. However, since 2011, from initiatives such as; “Go Bike”, “Cyclers” and several other cycling motivators in various neighbourhoods have been encouraging bicycling in Cairo. Similar to the bicycle challenge, there is a challenge for motorcycle owners; unlike cases in South and Southeast Asian megacities, where motorcycling is the main choice of transport, a mere 0.8 percent of households in Cairo own a motorbike (USAID, 2010). Another challenge the traffic in Cairo faces, is the fact that most traffic intersection lights are entirely manual, with only a couple of weeks of automatic traffic synchronization per year. Moreover, attempts to enforce traffic rules are always defeated in the face of corruption (Sims, 2010).

When discussing street vendors and the informal transport phenomena, low employment rates and high levels of poverty contribute to the high share of workers in the informal sector in Egypt, where the informal sector accounts for 40% of the GDP according to World Bank (Alter Chen, 2000). It is of vital importance to point out that street vending is not merely about income; people do business on the street to make a living and this cannot be limited only to sales and income. As Shepherd et al., argued that it is in fact a way of living, merging material gain and the degree which people participate in shaping their own lives (Shepherd, Wiklund, & Patzelt, 2009). Street salesmen want to see their place within the market community as an aspect of their identity. This illustrates the mutual dependency of the thick bonds of community and the short-term bonds of exchange that constitute an economy-in-practice (Gudeman, 2001).

This paper has been conducted over the course of two years, in which urban management of streets in downtown Cairo were studied mainly to understand informal activities in the streets of Cairo. The study aims to help decision-makers, urban designers and planners in proposing solutions for a proliferating problem. The adopted approach is a case study methodology taken a step further by proposing a viable solution for a living street and analysing what it takes to make a complete street.
2. METHODOLOGY

A case study methodology was chosen as it suits the complexity of this study. Robert Stake points out that the method of investigation is not critical in case study research, but that the object of study is (1998). In this study, the street vendors’ problem is the main object of study. A combination of different qualitative techniques was used within our case study investigation including site observation, semi-structured walking interviews, video filming, field notes and questionnaires. Site observations and field notes together with video filming were the tools used in our preliminary investigations as well as to get into further depth in our study problems. They were also useful tools for identifying the different stakeholders involved. Semi-structured walking interviews and questionnaires were conducted with street vendors, shop owners and street users. A total of 20 interviews and questionnaires were conducted. The sample surveyed was based on a stratified random sampling selection. All the collected data were transcribed, codified and then analysed to identify the major problems within the different stakeholders involved in this study. The analysis better describes a design proposal using the concept of a living complete street that aims to solve this major problem and offer a moderate compromise mainly for street vendors and shop owners.

3. CASE STUDY DESCRIPTION

The street vendors of Cairo represent over a million people in a city of 17 million inhabitants, with a rise in unemployment, from 8.9 percent in the first quarter of 2011 to 13.4 percent in the fourth quarter of 2013 according to the Central Agency for Public Mobilization and Statistics (CAPMAS, 2013). Since then, the number of unemployed citizens increased by 1.3 million to 3.65 million people in the last quarter of 2013 (CAPMAS, 2013)

Street vendors in Egypt are concentrated in Greater Cairo (Giza and Cairo) with more than 60 percent of street vendors in Egypt selling in Cairo (Thabet, 2009). This centralized percentage might be due to the fact that Greater Cairo is the biggest city in terms of size and has the largest population in the country. Meanwhile, smaller cities, despite having lower percentages of street vendors, suffer from the same congestion. It is important to note that Upper Egypt comes as the largest labour exporter with a 37 percent rate of immigration to Giza (Thabet, 2009). Cairo and Giza also host a larger number street vendors than any other city, as labour-seekers turn to the capital for employment.

Located in the heart of Downtown Cairo, Talaat Harb Street is famous for its many shops offering knock-off clothes and accessories at very cheap prices. Before the 25th of January Revolution in 2011, the phenomenon of the street vendors was limited to downtown Cairo in only a few specific locations. Three years later, after the Revolution, the street landscape has completely changed. Street vendors do not only occupy the sidewalks, but also occupy a strip adjacent to the sidewalk and taking over car lane in the street. The original carrying capacity of the street design was designed to allow four car lanes to drive; however, after the invasion of street vendors, only one lane is available for cars (as shown in figure 1). Illegally set up on the sidewalks in front of licensed shops, offering items at half the price as the stores they block, they have become somewhat of a nuisance to business owners (Rafaat & Kafafy, 2014).
Street vendors are autonomous when it comes to choosing a location for their sales and the amount of space they occupy. Despite having limited resources, they show creativity in displaying their products and conserving neighbouring selling spaces. However, as figures 1 & 2 show, there is minimal consideration to other stakeholder on the street. The street has essentially become occupied by street vendors.
The worsening crisis of street vendors in Downtown Cairo, whereby they clogged most of the main streets, pushed officials in Cairo to wage crackdowns throughout the summer of 2014, relocating street vendors. The prime Minister announced removing the street vendors in a decent and civilized way. In July 2014, the decision was taken to move downtown street vendors to Turguman garage (a nearby deserted area/lot of land).
However, Turguman is not equipped for their businesses for the following reasons:

i) Entrances to site are quite narrow and not easy to access by customers

ii) The site is not equipped with services (merchandise storage space, electricity, water)

iii) The site is surrounded by other professions like mechanics, plumbers, and metal workers

iv) The site was previously meant to be a shopping space and failed

v) Rents are high relative to the lack of customers and services on site.

The absence of street vendors in Downtown Cairo after their relocation in August 2014 was maintained by a strong security presence. Police were stationed at opposite ends of the street, and the entrances to the street were blocked off by metal barriers, taking up the same space as the street vendors with the use of metal barriers to block off any future encroachment. The police presence is also an attempt to circumvent a possible comeback by the vendors, who had been removed in the past and still came back to the streets of Downtown Cairo. Shahir George, a researcher at the Egyptian Initiative for Personal Rights (EIPR) stated how unsustainable it is to move street vendors away, as such a solution has to be maintained by the constant presence of policemen and tanks. (Magid, 2014)

What is witnessed in the Turguman area after the relocation of Talaat Harb street vendors is the alteration of some vendors’ merchandise; instead of selling clothes or other goods, they have begun to sell food -due to the lack of customers- to other vendors. After approaching some of them and asking why they have changed their product, their only reply was, “We have to continue living.” After being pushed out of downtown, street vendors started returning to Talaat Harb slowly at the end of September 2014 after the police withdrew from the premises. Based on some observations by activists, they mentioned that the vendors are now bringing their families with them downtown and are willing to clash with the police if need be (Fathy, 2014).

4. COMPLETE STREET DESIGN PROPOSAL

The concept of a living complete street was selected as a strategy to solve the problem of street vendors. In addition to acting as a pilot design proposal for Downtown streets that lack a lot of facilities for users. Studies proved that complete streets are more practical solutions with long term benefits for communities with limited economic resources (Carr, 2005, Fleming, 2012; Speck, 2012), which suits the Egyptian situation. There are many defined ways to create more complete roadways quickly, at a low cost, and with a high positive impact on locals (Bain, Gray & Rodgers, 2012; Wheeler, & Beatley, (red.) 2014).

Safety and convenience for everyone was a main objective in our proposed solution. A complete street should be safe and offer comfortable access for pedestrians, bicycles and transit users (Pucher & Buehler (red.) 2012; Rosen, Cox & Horton (red.) 2007). We tried to follow the main principles in designing a living complete street, which is a design that suits all ages, abilities, and modes of travel. Our proposed complete street design aims to operate the entire street network for all street users. Senior citizens, people with disabilities, and kids were of prime concern as they are currently the most vulnerable to street accidents in Cairo. Also, generally citizens with special needs are almost neglected in the design of street networks and infrastructure.

A majority of streets in Downtown Cairo were designed with only cars in mind and are teeming with traffic jams. The current state of streets does not support many of the pedestrians, but rather supports motorists. Walking, bicycling, and taking public transportation are inconvenient, unattractive, and, too often, unsafe. The suggested design in this study offers a wide range of benefits while proving to be cost effective, profitable, eco-friendly and most importantly, safe (see figure 4).
The street can now accommodate street vendors in a way that makes it possible for shop owners to run their businesses without conflicts as shown in figure 5. The proposal aims to make it easier for pedestrians to cross the street or walk to shops. The street vendors can use their booths during certain times of the day in order to leave the possibility for the shop owners to run their businesses. These street vending times should be planned and monitored by municipal officials based on a contract with street vendors themselves. The booths should be rented for a reasonable price and certain type of goods could be regulated to avoid clashes with existing shop owners. The booth is to be constructed from light durable materials with the possibility that they be folded to increase sidewalk walking space if needed. Paving materials are used with a specific colour code and textures for street users with special needs and to identify the entrances of residential buildings and shops. The materials suggested are to be eco-friendly ones and preferably from recycled construction waste to reduce cost.

Bike and car sharing ideas suit the nature of Downtown Cairo best, as it is considered the central business district of the city. These programs would help replace congestion-clogged trips as well as help people reduce using their private cars while still reaching their destination in a swift and economical way. We propose adding a bike lane to be part of the street as opposed to on the sidewalk which is meant for functions like street vendors’ booths, seating and waiting areas for pedestrians and transit users. In addition, it is more economical and easier to implement as a retrofitting solution. Bikes and car parking areas were also considered. It was not possible to add a special bus lane, but a comfortable and accessible public bus stop was planned.

Drinking fountains were introduced in our design, inspired from traditional streets in Cairo to offer cold water for pedestrians. Snack shops are also accommodated for to offer another type of booth for street vendors. Deciduous trees are proposed for shade. The selected types should be indigenous, low maintenance and water efficient. Plantings help filter the air from dust and reduce air pollution, especially from cars. Waste-sorting systems were also of a prime concern. Generally, Egypt’s garbage problem is growing due to the lack of a centralized waste management system. Waste containers for solid and organic disposal are placed with clear signs and instructions. We designed the organic waste container to be used directly for street plantings.
We also propose using solar panels over the existing shops’ shading devices and over the roofs of booths. The feasibility of construction and the mounting angle for the panels to avoid any shading from the buildings or other obstructing elements were also considered. The idea is to provide an extra energy source, which can be used for booth lighting and operations. If extra energy is produced, it can be transported to the main street grid and the cost can be deducted from the annual tax of shop owners or from the rent of the street vendor booths. Additionally, street lighting for both cars and pedestrians should be powered by solar LED lamps. Some other smart, user-friendly solutions like digital interactive city maps for tourists and locals together with information boards for apps to use car and bike sharing systems is suggested.

5. CONCLUSIONS

Streets are an integral part of our cities and towns. Street markets (Suq) are a common feature in traditional Egyptian cities, however the phenomena of street vendors recently in Cairo is becoming a threat. This study proposed a design solution for a living complete street to help solve the problem of street vendors and to avoid conflicts and unregistered employment without taxes or benefits. Our proposal not only managed to accommodate a decent place for street vendors, but it also managed to accommodate the needs of local citizens to walk on foot, use public transportation, and even use bicycles in a safer and easier manner. People of all ages and abilities would have more options when travelling. We attempt to provide in our design proposal user-friendly and cost efficient facilities. A pilot project implementation is needed to assess this design proposal. More advocates for applying living complete street designs are needed and more engagement from local policy and decision-makers in government are also needed.

REFERENCES


Fleming, Steven. (2012). Cycle space: architectural and urban design in the age of the bicycle. Rotterdam: Nai010 Publishers


