REDEVELOPMENT AND LINKAGE OF URBAN PUBLIC MARKETS: THE CASE OF SILCHAR TOWN, INDIA

Meenakshi SINHA
Assistant Professor, Piloo Mody College of Architecture, Cuttack, India,
e-mail: meenakshiarch90@gmail.com

Deepashree CHOUDHURY
Professor, Piloo Mody College of Architecture, Cuttack, India,
e-mail: ar.deepachoudhury@gmail.com

Abstract. Public markets have had a socio-cultural significance in addition to serving the day-to-day shopping needs of the urban population. Most often their number and expanse increase whenever cities expand in terms of population or territory, but their growth rarely follows an organized pattern. This results in a lack of appropriate linkages between different public markets and erodes spatial qualities. The unplanned market expansion also leads to inadequate infrastructure and dents the image of the city. An appropriate public market hierarchy that responds to contextual needs and offers adequate infrastructure and amenities is necessary for every city’s sustenance. This paper discusses various aspects of urban public markets. Next, it suggests interventions for establishing an efficient linkage between major public markets located in Silchar, a town in the state of Assam in the Eastern part of India followed by a proposal for the redevelopment of the existing market area of Fatak Bazaar, Silchar. This paper uses both primary and secondary data for achieving the outlined aim and adopts a mixed methodology of data analysis. The design proposals recommended here will find wide-scale applicability in the case of towns with similar contextual realities.

Key words: urban public markets, hierarchy, linkage, design proposal

1. Introduction

Since the inception of civilization, public markets have acted as the most significant and vibrant public spaces of human settlements (Loo-Lee et al., 2002; Janssens and Sezer, 2013; Breines et al., 2022). Historically, many cities’ growth has been fueled by the increasing prosperity of public markets. Apart from fulfilling the everyday needs of the common people by providing various commodities, public markets play a major role in connecting diverse ethnic, social, and financial communities thus integrating the region (Madanipour, 1999; Ali, 2016; Choudhury, 2017).

However, the advent of shopping malls, supermarkets, fast-food chains, and stand-alone stores of branded products at the beginning of the 19th century, in almost all cities over the world, brought about a decline in the business of historical public markets and subsequently led to the closure of many of them. But today, a reversal of the trend has started. The resurgence of the public markets is observed in many cities as their potential as rejuvenators of cities'
economic, social, and cultural life is increasingly being realized (Montgomery, 1998; Mishra, 2019).

2. Aim and objectives
The paper aims to explore the different aspects of urban public markets. It suggests various strategies for establishing a hierarchy and linkage of identified local markets situated in Silchar town, India which will facilitate efficient distribution of various agricultural products from the surrounding hinterlands to urban consumers of the City. Next, a detailed study of the Fatak Bazaar market, a major mixed-use wholesale cum retail market in the town of Silchar is carried out to suggest design interventions aimed at integrating the market efficiently into the urban realm.

3. Methodology
The paper uses primary data collected through a physical survey and structured and semi-structured interviews of various stakeholders as well as secondary data to achieve the outlined objectives. The physical survey involved triangulation of field observation on site. Photo and video documentation were further used to construct a detailed map of the intervention area. A semi-structured interview with 30 respondents (belonging to various stakeholders e.g., farmers, vendors, stall owners, visitors, members of the market management committee, and officials from the municipality) was conducted before listing problems facing the market (Fig. 1).

4. Scope and limitations
The research is limited to suggesting a macro-level linkage between the different markets of Silchar town. Design interventions have been suggested only for the area Fatak Bazaar market which is concerned with the selling of perishable food crops.

5. Markets and marketplaces: various conceptions
The term market signifies a means by which goods and services are exchanged and the marketplace is understood as a location where buyers and sellers come in contact with each other and transact either directly or through mediating agents or institutions (Casson and Lee, 2011). So, in a literal sense, markets are locations where things are bought and sold. In the modern industrial system, the expansion of transport and communication networks has expanded the market from one place to broader geographical areas which conduct business through hierarchy, linkage, and competition, both physical and virtual.

The market has various connotations for various knowledge domains, e.g., economists define the market, not as any particular physical location where buying and selling take place, but as any extended region in which buyers and sellers are free to interact with each other which results in different market dynamics like price and other logistical variables stabilizing over time.
(Faulconbridge et al., 2018). According to sociologists, markets are socially produced places where along with economic exchange, social interaction between buyers and sellers under a set of formal rules and informal understandings governing relations among competitors, suppliers, and customers play an important role. In the contemporary world, virtual or online marketplaces are also important platforms for trade (Najib and Sosianika, 2017). In the domain of built environment professionals like architects, planners, and urban designers’ markets are conceived as physical places where the exchange of products and information takes place under appropriate spatial conditions. It is precisely this definition this research takes up for its inquiries.

6. Public markets

Though the public market definition varies widely among contexts, in general, it can be understood as a market that focuses on selling varieties of products including both perishable, non-perishable food commodities as well as non-food-related products (Watson, 2009). Other attributes most commonly associated with public markets are that they are generally owned by public entities, allow non-discriminated access to all citizens, operate from public spaces, and operate with public goals in mind; though exceptions to these generalizations are also quite common (Choudhury, 2015).

The public markets have a wide variety of forms and range from planned to unplanned entities. A few typologies of public markets based on physical formats commonly found across the globe are as follows:

- open-air markets which may be permanent or temporary and operate once or a few times a week.
- covered markets are those which function under sheds or indoor spaces with clearly delineated areas for selling different wares.
- informal markets by street vendors.
- market halls are indoor buildings with permanent stalls for vendors.
- market districts are spatially spread out hubs of market-related activity which may include indoor markets, wholesale facilities, retail shops, eateries, and other entertainment avenues.

To give a few examples; a middle eastern souk (from Arabic), a bazaar (from Persian), a fixed mercado (from Spanish), itinerant tianguis (from Mexico), or palengke (from Philippines), are a few different terms used to describe market places in different parts of the world. These marketplaces have unique space configurations depending on the demographical characteristics of their patrons, culture, ambient and geographic conditions, and working and regulatory frameworks that uniquely contribute to the identity and sense of place.

6.1. Origin of public markets

Public markets are as old as civilization. For millennia, cities have shaped and been shaped by public market activity. The origin of public markets as physical places can be traced back to three separate points. The first being rural fairs, the second for the service of landlords, and the third arising out of the spread of inter-country trade. Firstly, cultivators needed to sell extra produce to procure other objects of daily needs after feeding their families. All such cultivators assembling at a single location facilitated interaction and exchange and thus the first physical marketplaces came into being. Secondly, the cultivators paid rent to landlords and monarchs in cash or
kind who in turn patronized warriors, clients, and artisans with the rent received. These monetary exchanges led to the growth of towns as centers of trade and production. Thirdly, as trade expanded beyond the boundaries of native states and countries, the demand for physical places increased. These evolved as marketplaces where principles of commercial gain could be put in force, without much thought given to moral obligations and norms that had to be respected while transacting with known people in close-knit communities. This profit-centered business also required regulations and supervision to protect the public interest. A physical place where all selling and buying activities were concentrated made the job of regulatory authorities easier.

6.2. Growth trajectory of public markets

Public markets are known to function in ancient Babylonia, Assyria, Phoenicia, Israel, Greece, Egypt, and the Arabian countries. They were mainly held in open during prescheduled times and dates. During early bronze, many trade routes emerged across the Mediterranean and Aegean with small markets springing up at their confluence. Documentary sources suggest that physical forms of the bazaar of permanent nature first developed around 3000 BCE in the Middle East (Mehdipour, 2003). These were usually organized as a series of alleys in a linear pattern along the city connecting different city gates located in different directional extremities and had covered roofs designed to protect traders and purchasers from the fierce sun (Brown, 2001). Many scholarly works quote the Grand Bazaar in Istanbul established in the 15th century as the world’s oldest planned marketplace which is operating to date with full vigor (Kaiser, 1991).

In ancient Greece, public marketplaces operated in the agora and were often clustered together according to the type of goods sold. The Greeks stoa which emerged as the predominant spatial form of such markets also started functioning as a public promenade. With this, the erstwhile pure economic role of markets extended to the social realm of the city. In Greece kapelos or mobile retailers were an important part of the trade, as producers of goods could not travel to distant markets and customers also could not travel frequently to marketplaces due to the difficult terrain of the country. In ancient Rome, selling and buying took place in the forum where multiple buildings with shops on different levels were built which were perhaps the earliest example of a permanent retail shopfront.

In Europe, though markets began in an informal and unregulated way, a system of formal, chartered markets was in place since the 12th century. In towns and cities, market crosses featuring some symbol of authority, such as a flag, royal crest, bell tower, or clock, symbolized the presence of public markets. Due to the milder climate, buying and selling often took place in the open air in European markets. Street vendors had designated places and some of them were allowed to conduct door-to-door selling. Perishables were sold in different areas under market sheds. Markets in Europe adopted centralized forms, unlike their middle eastern counterparts. Location-wise, sites close to monasteries, castles, or royal residences were chosen for operating them (Jones, 2006). In Italy, markets were held under covered arcades and shops took the form of mobile stalls (Vecchio, 2010). During the Middle Ages, charters proclaiming rights to organize private markets were granted to rich citizens by
monarchs. The private markets which were permanent and the mobile vendors gradually ousted the periodic public markets. Occasionally local fairs and festivals were organized in market areas in towns and cities which attracted huge crowds from the hinterlands as well. Due to the huge increase in numbers and relative proximity of market towns, strong competition between them surfaced. This in turn led to investments in spatial planning to provide good amenities which would attract buyers.

In the United States, public markets had humble beginnings. They started as open-air events where farmers, fishermen, and other food producers brought their produce on a pre-decided day and sold it to the customers who assembled there. These markets often convened in the middle of wide streets or on public lands. Special laws and ordinances are enacted by the local government to oversee the affairs of these weekly markets. Slowly to avoid the vagaries of weather, indoor market halls evolved in town centres. These market halls provided a permanent location for vendors to display and sell their wares and were equipped with adequate utilities, infrastructure for climate control, amenities like storage and refrigeration, and also places for public interaction and meet-ups (Masson and Freide, 2012). After the American revolution, the cities in America expanded in size and population, and their public markets also grew in size, complexity, and architectural articulation. By the middle of the 19th century, the dominant building type for public markets changed from the linear form of the long market house in the street to a square, block-type facility located on its own parcel of land. Levels of investment and architectural sophistication increased and brought other changes to the public market. As the markets started to accommodate civic facilities like police stations and community meeting halls, their civic roles increased. Also, keeping with the paying capacity of merchants, space hierarchies developed with poorer vendors left to sell their wares outside the market and more prosperous merchants selling within it (Sauder, 1981).

In Asia, before the 10th century, markets operated in the form of caravanserais (roadside inns where travelers could rest and recover from the day's journey) on established trade routes outside the city walls. Later on, organized markets within city limits emerged which served different groups of clients at different times of the day e.g., a system of morning markets trading in fresh produce and night markets trading in non-perishables were common practices that can be sighted in present days in many Asian countries including Thailand and India (Prabowo and Rahadi, 2015; Schmitt, 2015).

Continuing our exploration of public markets, we come to India. The origin of physical marketplaces in India can be traced back to the Indus valley civilization which existed between 3300 to 1300 BCE. Towns in the Indus valley civilization had granaries which could very well be the site of the sale of grains. Harappan sites had open marketplaces and market complexes with workshops around a central open area for carrying out buying and selling. In Mohenjodaro, small rooms ran on either side of the main streets with workshops above which functioned as shops. In Mohenjodaro, evidence of centrally local squares with walls along the perimeter and a singular entry serving as marketplaces were also found. These market squares had shops all around and
temporary platforms for traders from other villages, signaling the presence of intercity trade (Sharma et al., 2020). The first evidence of Indian bazaars appeared in the pre-Mauryan period (middle of 1st millennium BCE) in Kautilya’s Arthasastra which described planned and organized selling places of flowers, perfumes, toiletries, and other forest produce items in urban centers. Around the same time, Puhar in Southern India was also known to be a bustling urban center with market squares, streets, and boulevards. During the Chola period, (roughly 850 to 1279 CE), the commercial markets on streets for the sale of grains, textiles, jewelry, copperware, and leatherwork were famous. The literature of this era mentions various marketing entities like nagaram or commercial urban centers which included kadai (shops), angadi (markets), perangadi (a big market in the inner city). In this period, temples also actively participated in the trade of livestock, aromatic substances, oil, rice, lentils, spices, vegetables, and flowers and played a very significant role in the economic affairs of the city (Washbrook, 2010). Mughal Period (1526 to 1757 AD) saw the emergence of powerful trader communities. Bazaars of this era mostly consisted of shops on either side of the linear arcade, which were double-storied and covered and opened in octagonal courts halfway through their length (Hmood, 2017; Hajela, 2020). Meena Bazaar in Old Delhi, Begum Bazaar in Hyderabad, and Johari Bazaar in Jaipur, Chandni Chowk in Delhi; are a few examples of organic Indian bazaars which originated during the Mughal era and under the patronage of local kings and rulers.

With the encounter with Europe and the early colonial period (1498 to 1857 AD) with the Portuguese, middlemen started emerging in the Indian trade scene. Unlike Europe, in India industrial revolution was slow to catch on. This coupled with the availability of diverse and affordable wares, diverse activities and the proximity of public markets kept their importance undiminished for a long time. In India, most of the public markets had an organic origin. They sprang up wherever buyers would congregate and they expanded in area and their prosperity rose with increasing business. But over time, these markets became victims of unplanned development. Space crunch, narrow alleys, crowds, congestion, lack of infrastructures like parking, lighting, and ventilation, and at the same time the galore of modern and sophisticated malls, slowly led to the customers shunning them.

It can be seen that public markets throughout their existence have evolved differently in different parts of the world. Conditions like weather, tradition, and culture influenced their spatial forms and operation mechanisms. Despite the differences, in almost all contexts, the public markets evolved to become an integral part of public life. Also, owing to their direct contact with the citizens, public markets have been serving as an interface between the citizens and local government since their inception. From the time, trade activities started to happen from a single location designated as the marketplace, special buildings and spaces were constructed by local governments, and laws were put in place to ensure food quality and protect citizens from high prices, food shortages, and unethical practices (Bevir and Trentmann, 2005).

However, as mentioned earlier, with technological advances, which included
the railroads, canning, and refrigeration, 19th century onwards the economic and social status of public markets started to change. The rise of the wholesale system, increasing specialization among sellers and producers, rise of private food production and marketing enterprises, and lengthening of supply chains slowly eroded the primacy and profitability of public markets. By the mid-20th century, supermarkets arrived on the scene and overpowered the old public markets in terms of both convenience and sales volume, and many public markets either closed or fell into disrepair. As public markets were no longer the only suppliers of citizens' needs and the fact that the government no longer held to the idea of investing in public goods; led to their decline in most locales. It was not long before the consensus started to regard public markets as dying entities. Yet, public markets never wholly disappeared from urban discourses, and evidence of their comeback is getting stronger with each passing day. Helen Tangires, an authority on public markets in 19th century America, during her research, strongly refuted the claim that these markets were 'relics of the past'; she is in fact of the view that the public market will continue to be vital in sustaining agriculture, biodiversity, and a healthy relationship between urban and rural populations, economies, and production in the days to come. Despite the circumstances not wholly being in favor of operating the public markets, many cities around the world have resumed their maintenance or are developing new ones. Advocacy and support for reviving them are gaining momentum as their importance as facilitators of trade and food security and the role they play in the uplifting economic and social status of cities is increasingly being realized.

6.3. Role of public markets in cities and impetus to redevelop them

Public markets play multiple roles in the functioning and image building of the city (Schmidt and Nemeth, 2010; Zakaria et al., 2016; Moazemi, 2018). Since antiquity, public markets facilitated urban expansion, provided a platform for social and cultural exchanges between the citizenry and endowed their host cities with distinguishable urban character (McGrath, 1993; Morales, 2009; Sengar and Jadon, 2020; Eck et al., 2020). With time, they also emerged as an important contributor to the spatial narrative of the city due to their ever-expanding scale and reach. The public markets not only influence a town's economy through various commercial transactions but can be a major tool for making places safer, more interesting, and more vibrant (Janssens and Sezer, 2013). In addition to the basic functions of buying and selling, they generate economic opportunity for citizens, link urban & rural economies, bring together diverse people, promote mental health and well-being, create civic and democratic spaces, offer low-risk business opportunities for vendors from vulnerable populations and also act as a catalyst for renewing neighborhoods where they are situated (Banerjee, 2007; Mandeli, 2019). According to ‘Project for Public Spaces’, an organization known for advocacy and creation of community-powered public spaces around the world, “Markets spark urban revitalization, foster community diversity, and improve public health” (Sommer et al., 1983; Francis and Griffith, 2011; Darmawan et al., 2015). Certain types of public markets feed money back into the rural economy where farmers grow, raise, and produce their products and thus strengthen the economy of a region as a whole.
Also, in the face of issues like climate change and increasing social fragmentation in cities, the public markets are increasingly emerging as potent tools for leading cities toward a sustainable urban future by facilitating residents' access to food, decent jobs, and social infrastructure (Caramaschi, 2014). Moreover, the fact that public markets unlike private enterprises incorporate public goals in the business model makes them inevitable for cities. This focus on the public good is what makes successful markets grow and connect urban and rural economies (Haranath, 2019).

Despite the many benefits, public markets bring to their host cities, in both the global north and south, public markets are facing various threats; developmental pressure, lack of space and financial capacity to expand, paucity of infrastructure, and a lack of management capacity, etc. being a few among them. Additionally, the increasing proliferation of online markets and virtual shopping traditions is raising questions on the justification of employing resources for physical settings of markets. Under these circumstances, we must take long-term actions to improve and redevelop existing public market infrastructure, management, and operations. Public markets need to be recognized as the vital, resilient public spaces they are and must be redeveloped to their full potential taking cues from locale, sponsorship, scale, and mission. Redeveloping a public market to a more efficient model can prove to be a sure way to the overall development of a city without incurring huge infrastructure and social rehabilitation costs.

6.4. Broad Strategies for the redevelopment of public markets

The Redevelopment of public markets may involve upgradation, expansion, or modification of its physical structure, merchandising mix or operational processes, or combination of these, and must be carried out to increase their functional efficiency, boost economic performance, and enhance customer experience or for other reasons cited in the project brief.

Redevelopment of the public market usually aims for their economic, physical, or operational revival or a combination of one or more aspects. Drawing up of appropriate merchandising plan and rebalancing the retail mix can prove to be potent means of economic revival, linking markets of various sizes placed at various hierarchical levels within a town, city, or region and appropriate space planning in terms of layout, circulation, storage, parking, access, servicing, and infrastructure design can guide physical revival whereas operational revival of markets can be achieved through the introduction of specific local management options based a thorough understanding of local resources and capabilities and an appropriate leasing and fundraising strategy. Any redevelopment program for public markets must take the demographics it serves into account and must transform the markets into a civic institution for the city to generate strong advocacy for their continuance. This paper henceforth looks into the physical aspects of public market redevelopment strategies.

6.5. Public market: redevelopment design criteria

Physical aspects of any redevelopment plan for public markets have five main components; spatial organization, individual unit layout, spaces for buyer-seller interaction, temporary and permanent structure, and recreational spaces. The redevelopment strategies concerning physical spaces can broadly
be divided into four categories namely those which aim at: integration and addition of uses and activity for bringing in vitality and active engagement of visitors, increasing the comfort of users, and enhancing the positive image of the marketplace, developing access and linkages of the market and supporting social use of space and inclusion of all and promote it as a community destination.

The main domains that should be considered when improving an existing market or designing a new one can be broadly categorized in terms of design, building, and utility domains (Christina and Munawaroh, 2022). The physical layout of markets must support efficient space utilization, ensure an unobstructed traffic circulation pattern and effective parking plan, generate adequate possibility for interaction between the market users, provide efficient support facilities, and adequate arrangements for the display and sale of produce (Brown, 2002; Patrick and McKinnon, 2022). While designing or redeveloping public markets assigning the appropriate area for core function i.e. the sale area which comprises trader stalls and the local circulation area used for accessing these stalls or premises is of utmost importance. Space allocation and building design should account for future expansion needs as well as be flexible to meet changing social and economic needs. While dealing with perishable goods, spaces to support supply chain logistics and appropriate storage area provisions must be made (Jain and Sagar, 2021; Nessim et al., 2021).

Context-specific requirements must be accommodated in the overall plan e.g. the use of low-cost covering temporarily over the sales area during the peak period in local markets where the weather is harsh can increase footfall. Building designs should adopt universal design principles to facilitate barrier-free movement for users as well as different transport modes like handcarts and more sophisticated handling facilities. Spatial planning must provide for easing vehicular congestion, particularly case of markets, facilitate changing buying and selling patterns and engage alternative marketing channels for the efficient functioning of the market (Abacilar and Caymaz, 2022). A neat and clean hygienic infrastructure with daylighting and ventilation, proper dry/cold storage and display facilities are equally important for the sustainable existence of public markets (Brown, 2002; Zagroba, 2020). Any public market redevelopment strategy must begin with the aim of creating a likable spatial experience for visitors followed by the formulation of a program that supports community congregation in addition to its basic functions of buying and selling.

6.6. Linking public markets: enhancing their contribution

Public markets, unlike ubiquitous retail chains operating in a globalized food economy, cannot be divorced from the place in which they are found. To be successful, they must reflect the bounty of their food region and be an anchor destination in their community. Public markets also need to be appropriately scaled to the customer community that it is intended to serve so that they are large enough to create an attractive critical mass of activities that will keep customers coming back. Interlinking public markets which serve a singular town, city, or region by virtue of their proximity and hierarchical position facilitates the above (Kumar, 2017; Mishra and Kaul 2021). Interlinking the public markets also enables easy access and engenders well-connected supply chains which increase agricultural income,
encourage local trade, and make diverse food and other items available for the urban consumer (Franck, 2005; Utomo, 2018).

Initially, the movement of linking the various markets servicing the town and hinterlands was aimed squarely at helping the farmers do better business but with time the role of appropriate spatial and logistical connections between different markets in reinforcing local trade and bringing money into the local economy gained importance. Also, the effective linkage between different public markets can connect them to value chains, alternative sources of products and a set of customers, new marketing platforms based on digital operation, improved market infrastructure, and warehousing systems. This is especially beneficial for small markets as this will reduce transaction costs and limit the influence of intermediaries which in turn will aid in rectifying scale disadvantages. This will enable better participation of smallholders in different marketing arrangements and benefit consumers by way of better service and shopping experience (Balsas, 2020). A good linkage between different markets will also facilitate sustainable practices like recycling perishable waste and manufacturing pesticides out of waste (Visconti et al., 2014).

Markets in India including that of Silchar town are mostly unorganized and lack adequate infrastructure and policy support which results in their failure to cater to the needs of urban consumers. Effective linkage to value chains, farms, alternative markets, and new marketing platforms based on digital operation, improved market infrastructure, and warehousing systems will reduce transaction costs and limit the influence of intermediaries which in turn will aid in rectifying scale disadvantages. This will enable better participation of smallholders in different marketing arrangements and benefit consumers by way of better service and shopping experience (Balsas, 2020). A good linkage between different markets will also facilitate sustainable practices like recycling perishable waste and manufacturing pesticides out of waste (Visconti et al., 2014).

Markets in Silchar town have historical significance as a trading and commercial hub. The town has different types of markets which include wholesale, retail, mandis (large spread-out local markets), street-side stalls, etc. having different spatial configurations (Fig. 2). A few important markets of Silchar town are Fatak Bazaar (mixed-use wholesale cum retail), Satsang Ashram Road market (Retail Market), also known as Sobji Bazaar College Road (mixed-use retail cum farmers retail market place), Tarapur below flyover market (temporary Street marketplace), etc. Despite having many
defined market spaces, a sizeable number of perishable crop sellers are engaged in selling perishable crops around the streets of the city thinking they will be able to display their crops to the people passing by and limited access to markets. The chief reasons behind this are inefficient and unaffordable transport linkages. The established markets are also plagued by various issues stemming from a lack of planning and essential infrastructures like storage, inadequate public amenities, and environmental degradation which distances them from the public realm of the city.

7.1 Inadequacies in markets

An analysis of secondary data and a physical survey of the markets of the town revealed the following linkage issues between the various markets of Silchar town:

7.1.1. Layout and built space issues in Fatak Bazaar

(M1) Fatak Bazaar (mixed-use wholesale cum retail) is one of the biggest mixed-use wholesale cum retail markets in the town where farmers / vendors / hawkers come from local and nearby town areas to sell their perishable crops. Most of the vegetables and fruits supply arrives from Kharpatia, Srikona, Guwahati, Lumding, Meghalaya, Agartala, Mizoram, Haflong, etc.

The market is located in ward no-8 of the town and it is managed by the Silchar Municipal Board (SMB). Some permanent vendors pay the municipality for sitting inside the market premise. The market has 7 major entries and loading and unloading timings are major during the morning hours but it is carried out throughout the day leading to congestion and most connecting roads to the market are one-way roads with heavy traffic flow. The market is organized in blocks where a mix of wholesale cum retail zones exists. The market structure is described below (Fig. 3).

![Market structure of Fatak bazaar](image)

Fig. 3. Market structure of Fatak bazaar (Source: Authors).

The existing market layout has 7 blocks (labeled A to G) (Fig. 4 and Fig. 5).

![Map of Fatak Bazaar market](image)

Fig. 4. Map of Fatak Bazaar market showing the road network and the location of river Barak (Source: Google maps and primary survey).

The built structure of the market is a mix of old and new buildings with galvanized iron sheet roofing and reinforced cement concrete structures of two to four-storied buildings built later on. The height of most ground-floor structures is around 12 feet whereas the upper floors of buildings have an average height of 10 feet (Fig. 6). The old buildings are not in a good condition.
7.1.2. Layout and built space issues in the Satsang Ashram Road market

(M2) Satsang Ashram Road market is the existing neighborhood retail market also locally called Sobji Bazaar, College road. Here the local farmers sell their locally produced perishable crops as vendors and hawkers every day. The distance of this market from (M1) Fatak Bazaar is approximately 2 kilometers. This market is also maintained by the municipality and has permanently built old and new structures of reinforced cement concrete with sloped galvanized iron sheet roofs from which small shops operate. The market structure is the same as Fatak Bazaar. Here the perishable crops are sold in the vendor shops and also some are displayed outside on the ground under polythene sheets. There are majorly 2 numbers of entry points to the market. The market infrastructure here is better than in the Fatak Bazaar Market.

7.1.3. Layout and built space issues in Tarapur below flyover street market

(M3) Tarapur below Flyover street market is a temporary marketplace where a lot of farmers from the nearby farmlands come through various means of transportation to sell their commodities. They try to sell the perishable crops by the day's end but a lot is wasted. This is not a legitimate market but due to its convenient location, the sellers sit here. Here the vegetables brought are either locally produced crops or are brought from Fatak Bazaar and neighboring areas. The perishable crop display is on the ground putting a polythene sheet. The distance of this location from the Fatak Bazaar is around 2.7 kilometers approximately. This is a daily farmers' market that provides a direct selling platform for the farmers but creates road congestion and unsanitary

The stalls here have no shutter and are 6 feet x 10 feet approximately, having a plinth height of 1 foot 5 inches to 2 feet and a floor height of 12 feet. There are around 3 numbers of paid toilets of which one is an open urinal constructed by the municipality and maintained by the market committee. Here the infrastructure needs a lot of development and attention. Unhygienic selling conditions, improper disposal of garbage, and inadequate maintenance (around 22 drainage lines run within the market premise which are cleaned yearly only 2 times) have degraded the living conditions to a large extent here. The width of the narrow roads where hawkers under the lessee sit is approximately 10 feet but due to drains on both sides, only 6 to 8 feet of space remains usable which creates congestion.
conditions due to improper disposal of garbage. A heavy crowd can be seen buying vegetables and fruits around this area during all hours of the day.

After studying the above town markets, it is observed that most of the users belonging to various user groups lack awareness about hygiene. Many initiatives have been taken by authorities but due to a lack of awareness and adaptability, many could not be executed on the ground. In some town markets, it can be seen that despite the covered shed being provided by the authority, the sellers prefer to sit by the roadside.

7.2. Recommendations for connecting the markets

After a study of the existing market structure, the following recommendations are proposed:

A dedicated linkage connecting different hierarchies of Markets (Fig. 8) (M1), (M2), and (M3) within the town through a dedicated linkage for carrying out different activities related to perishable crops by the user group reducing the congestion on major Town roads. This linkage could further be used for garbage collection, garbage recycling trucks could collect perishable crop garbage within the ring of the Mini Perishable Crop Hygiene Linkage Network. Vegetable sellers who buy crops from the (M1) wholesale market can travel through the mini food road using Compressed Natural Gas vans and autos maintaining the eco-system of perishable crop hygiene. Using this linkage, the perishable crops could be carried as early as possible during the fresh morning hours when the loading and unloading happen in the (M1) wholesale market by small mobile vegetable/fruit hawkers using carts. Vendors/hawkers having activities related to perishable crops can connect to the Railway. Water transport using this linkage. The linkage is described in the figure below:

7.2.2. Recommendations for the jetty landing stage

The development of a small Jetty landing stage around the (M1) Fatak Bazaar market premise is recommended for bringing perishable crops using the water network. This location is suggested as the river Barak is reachable from the (M1) Fatak Bazaar (Fig. 7, Fig. 8). The existing steamer transport cost is less so the daily
traveling vendors/hawkers would find it convenient for transportation. The steamer from the recommended jetty landing stage can connect to nearby existing ghats for the transport of perishable crops. This process can also help in reducing the traffic congestion caused by loading/unloading in the one-way road network. From the jetty, coolies can be employed for reaching the market.

7.2.3. Recommendations for traffic congestion
The loading and unloading of trucks in the Fatak Bazaar area could be restricted in the existing bus stand (point 4 in Fig. 7) on the Silchar-Lumding road near the market and allowing only minivans to carry on further loading/unloading functioning inside the market area.

7.2.4. Recommendations for the retail market
The Satsang Ashram Road Market has a satisfactory infrastructure but still could be enhanced. Therefore, the vegetable and fruit vendor shops could be defined with designated color codes as the market has a mix of retail shops for various commodities. Thermocol ice boxes could be used for the storage of fresh vegetables maintaining hygiene as a priority. Garbage recycle dustbins at regular intervals are to be provided for easy collection of garbage by the municipal truck.

7.2.5. Recommendations for the temporary street markets
Every day a good number of hawkers also travel by various modes of transport to sell their perishable crops below the (M3) Tarapur flyover temporary street marketplace. Designated street vending zones could be introduced in these areas in the master plan and garbage bins to be provided around such areas. Compressed natural gas vans/autos/carts that can travel around the nearby residential areas could be provided for the hygienic selling of vegetables and fruits. The leftover waste of the perishable crops at the day end could be dumped in the garbage bin fixed in these areas so that it becomes easier for the garbage recycling truck of the local authority to collect waste.

7.2.6. Recommendations for the perishable waste disposal
The garbage recycles truck can collect the market garbage and connect to the recommended intervention of a jetty landing stage around the nearby ghat areas of the Fatak Bazaar, from where the steamer ships can collect all waste from the garbage recycle truck and lead towards the dumping zone at Meherpur area which is approximate 2.5 kilometers away from the main town. This process might take some time to dispose of the waste to reach the dumping zone but would keep the town roads clean and air quality would be hygienic and pollution free. The perishable garbage waste collected could further be processed for manufacturing pesticides out of waste which could be again sold/distributed to the farmers through the markets.

7.2.7. Recommendations for creating awareness
Weekly or monthly awareness campaigns could be hosted on auto or vans creating awareness regarding the role of vendors and hawkers in maintaining a hygienic selling condition.

8. Fatak Bazaar market -the study area
The maroon area marked in Fig. 9 is the area of intervention after the study. The study area is:
1) A mix of both wholesale and retail activity but the vegetable market is spread around different stretches of the market area. The marked area is one such area where perishable crops are sold.
2) Spread across 13 acres of land. The vegetable market is spread around different stretches of the market area.
3) Entry 1 is from the Chamragudam point and Entry 2 is from the Waterworks Road.

Here the intervention is limited to a single stretch containing the vegetable and fruit market.

8.1. Location and context
The Fatak Bazaar market (M1) is one of the biggest mixed-use and wholesale cum retail markets in Silchar town. The market is located in ward number 8 of the town and it includes wholesale trade, retail shops, street vendors, dealers, traders, and hawkers. This market operates on both sides of a busy street with a heavy flow of vehicles throughout the day on the connecting roads. The identified stretch is occupied by hawkers selling perishable vegetables on both sides. Loading/ unloading throughout the day leads to traffic congestion and the presence of many one-way roads leads to traffic congestion in the area. There are majorly 7 entry points to the market. The entry points are marked in (Fig. 9). The market is well connected to the city by road, rail, and water networks (Fig. 8).

8.2. Issues identified

After undertaking a physical survey of the area and conducting a semi-structured interview with 20 respondents the problems which hindered efficient functioning and were responsible for the deterioration of environmental qualities and the image of the market were identified. They are listed in Table 1.

9. Recommended interventions for the Fatak Bazaar market

After analyzing the data achieved from the case study the design interventions in the identified stretch of the Fatak Bazaar market are suggested along with certain developmental recommendations for its improvement. These measures are listed below in brief (Fig. 10, Fig. 11, Fig. 12):

1) Minimizing the number of entries to the site will reduce the mixed traffic flow within the market premise thus relieving congestion.

2) From the existing bus stand area (Fig. 7) which is around 1.2 kilometers approximately up to Fatak Bazaar market, the CNG vans can bring the perishable commodities to the market from the suggested entry point from Waterworks Road (Fig. 10).

3) Types of vehicles entering the Fatak Bazaar area can be restricted e.g., allowing only 2-wheelers and light vehicles like the rickshaw and Tuk-Tuk (battery-operated auto-rikshaws) inside the restricted market premise will minimize traffic congestion in the area. The heavy loading and unloading process of the market premise could be restricted to morning hours so that the public doesn’t face disturbance during the buying hours.
### Table 1. Problems detected in existing infrastructure (through physical surveys and interview analysis) in the Fatak Bazaar market (Source: Authors).

<table>
<thead>
<tr>
<th>Inferences drawn from interviews</th>
<th>Existing Infrastructure</th>
<th>Issues Identified</th>
</tr>
</thead>
<tbody>
<tr>
<td>The existing market stretch area studied contains approximately 80 small hawkers sitting on both sides of the market stretch under the lessee. The identified stretch also includes vegetable vendor shops under the municipality store selling dry perishables like onions, potatoes, etc. whereas the rest sell seasonal perishable crops. The old vegetable market which is also maintained by the municipality has around 250-300 approximately vegetable sellers. They sit under the truss structure and do not have a separate storage facility. Here a huge number of perishable crops get wasted and are dumped around the selling space or the road.</td>
<td>The existing infrastructure of the market is a mix of very old Assam-type two-storied structures and reinforced cement concrete buildings that go up to four stories with a considerable proportion of them in poor built condition. The old vegetable market in the identified stretch has a truss structure with a rusted asbestos roof.</td>
<td>8 to 10 feet wide internal narrow congested road loaded with vegetable carts engaged in loading/unloading; added to that animals, 2-wheeled vehicles, autos, rickshaws, and non-motorized transport modes passing through the market creates congestion; improper disposal of garbage and lack of awareness regarding the use of dustbins for maintaining hygiene.</td>
</tr>
<tr>
<td>The identified stretch contains the drain line passing by the shops where the drainage cover is improper, which leads to the emanation of a foul smell. Hawkers consuming space in the narrow road further obstruct circulation.</td>
<td>The identified stretch contains the drain line passing by the shops where the drainage cover is improper, which leads to the emanation of a foul smell.</td>
<td>No proper roofing in between the narrow lane selling vegetables and the drainage line goes through the vegetable market area leading to unhygienic conditions.</td>
</tr>
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<td>The existing plinth height of shops varies in the stretch as few are directly connected to the road level. Some new shops have a plinth height of around 2 feet (approximately). The shop height is around 10-11 feet height with a reinforced cement concrete roof.</td>
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</tr>
<tr>
<td>The width between the shops on both sides of the narrow road is around 8-9 feet which are again loaded with hawker carts engaged in loading and unloading wares. Haphazardly placed electric poles at frequent intervals also obstruct traffic flow and circulation.</td>
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<td>Lack of storage, public toilets, and other public amenities.</td>
</tr>
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</table>

4) Eco-mesh fencing can be provided in the stretch to create a neat barrier. This can be used to install signages (Fig. 11).

5) Sprinkler facilities can be provided in the vegetable selling area where hawkers seat and the old vegetable market area for firefighting (Fig. 5, Fig. 13).

6) The existing roof of buildings located in the old vegetable market can be modified. The suggested roof design is represented in Fig. 11.

7) The existing drains can be replaced with new concrete drain covers and narrow roads could be paved.

10. Discussion

The findings of the paper suggest that efficient integration of public markets with the urban realm of the city can be achieved through the establishment of appropriate linkages between the different components of the market system and appropriate spatial planning initiatives. The study
reported a common consensus derived through first-hand interviews and physical surveys that the redevelopment strategy of Fatak Bazaar market needs to address many design and infrastructural problems; a few of which are poor building condition, crowded roads, lack of sanitation and public amenities for visitors, storage facilities for sellers, insufficient space for transacting business, etc. This paper has developed an understanding of the different aspects of urban public markets, their importance for present-day cities, and the different challenges facing them through a critical literature study. It also guides on how to formulate a context-specific intervention strategy for the redevelopment of such markets for increasing their contribution to society. The nature of the hierarchical link between different public markets in Silchar town, India was critically analyzed and various macro-level interventions were suggested to address the inadequacies thus deciphered. Following this, the research identified the various existing problems in the domains of spatial planning and infrastructure in the delineated study area. Along with a physical survey, interviews of various stakeholders involved with the market’s daily operations were conducted to achieve the study objectives. Interview respondents were selected by the researcher while doing the field survey through random probability sampling. Interviewees were chosen from all walks of life without any discrimination based on their socio-cultural and literary status; with long-term familiarity with the market being the only criterion behind their eligibility. Apart from the members of local governing bodies, who worked with policymaking and their implementation of the study area, respondents were chosen without giving any prior notice to anyone to avoid any thinking bias. Simultaneous interviews were conducted in different areas of the market ensuring that the interviewees are not influenced by each other’s opinions. Interviews were conducted in real-life situations through unstructured questionnaires in the local Bengali language.

The methodology adopted for this research and interventions suggested for the redevelopment of the market have high applicability for similar markets, both in Indian and global contexts, particularly for those located in small cities and lacking fanfare despite playing important role in citizens’ daily life. This research is advocacy against the approach of superficial beautification of markets considered too mundane whenever the case of redevelopment arises. Though this research is limited by the fact that it looks into public market redevelopment through urban designers’ and architects’ perspectives, we
believe these limitations have not impacted the primary outcome of the study. Also, future studies can build on this work and further include an additional lens for such inquiries and provide more in-depth inputs. The purpose of this paper is to make a good starting point for further inquiries into issues facing public markets in contemporary cities and lay the foundation on which detailed planning input and policy strategies for their redevelopment can be based.

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The paper outlines the importance of the management of existing resources with structured urban planning for creating opportunities for growth for all stakeholders of the market. It suggests measures like strengthening the use of water transport and railway network for bringing perishable crops, developing existing infrastructures of the wholesale and retail markets, adding public amenities, providing appropriate urban furniture and signage, etc. for transforming these public markets from mere places to buy necessities to community-centric civic entities. After all, by enriching cities with access to affordable foods and supporting a network of regional farmers, genuine public markets also serve a greater public good.

11. Conclusions

In this paper, different aspects of public markets were explored through existing literature. Public markets of Silchar town and Fatak Bazaar area were studied through physical surveys and interviews to understand the issues affecting their operation and usage negatively and various spreads across the domains of planning, transportation, infrastructure, amenities, and amenities that can efficiently link different local markets of Silchar town. The small but significant interventions and recommendations particularly put forward for the overall improvement of Fatak Bazaar can be extrapolated to other similar situations after required contextual alignment and thus serves as a basic blueprint for achieving a sustainable public market environment and creation of a hygienic public eco-system. public markets around the world which are placed in similar contexts; i.e., used by citizens extensively but lack any special patronage that may arise out of historical affiliations, specialty trading, location among tourist circuits, etc.

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REFERENCES


Misirlosy D. (2021), Rethinking Municipal Markets (Bandabuliya) within the Context of Sustainability: Case of Cyprus, Civil Engineering and Architecture 9(3):883-891.


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