Project Formulation and Appraisal ofConstruction of Daily Market at Periyanaikenpalayam, Coimbatore.

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ABSTRACT

The necessity for development is increasingly crucial in today's competitive world as nations transition from developing to developed status. Infrastructure development plays a pivotal role in this process. Our project focuses on contributing to the development of Periyanaickenpalayam, a neighbourhood in Coimbatore, specifically targeting its stagnant local market. The current market conditions resemble those of 60 years ago, with long-standing issues that urgently need addressing to meet contemporary demands. Our approach involves comprehensive research on consumer needs, market dynamics, and infrastructure planning. We will meticulously design facilities to modernize the market, ensuring compliance with all regulations. The project will culminate in detailed quantity surveys, rate analysis, and cost estimates for construction, aiming to revitalize the market efficiently.

Keywords: Market revitalization, Infrastructure development, Feasibility study, Build Own Operate Transfer (BOOT), Economic impact, Cost benefit analysis (CBA), Community engagement

INTRODUCTION

Coimbatore, a major metropolitan city in Tamil Nadu, India, ranks as the 16th largest urban agglomeration in the country. Situated at 11.152530973593459 latitude and 76.94543298438037 longitude, it spans 642.12 square kilometres and rests 427 meters above sea level on the Noyil River's banks. Administered by the Coimbatore Municipal Corporation, it serves as the district's administrative capital and has been designated for smart city development by the Government of India. Our project focuses on the local market in Periyanaickenpalayam, an area about 20 kilometres north of Gandhipuram, known for rapid industrial growth. Currently lacking organization, the market operates on a first-come, first-served basis, leading to congestion and safety concerns for pedestrians and commuters, particularly during festivals and peak periods. To address these issues, we conducted field surveys and gathered data through Google Forms across various sectors. Based on insights from these surveys, we proposed a detailed redesign and estimated project costs. We also explored

implementing a Build Own Operate Transfer (BOOT) model, aiming to manage financial risks while enhancing market functionality. The BOOT model involves a private entity designing, financing, constructing, owning, and operating the infrastructure for a specified period. This approach allows the private sector to invest in infrastructure development, transferring ownership back to the government after the agreed-upon period, thus balancing operational and financial responsibilities effectively.

OBJECTIVES

- To identify and analyse the feasibility of project.
- To develop a plan and detailed estimate for local market.
- Perform cost benefit analysis for local market.

LITERATURE REVIEW

Wolf (1997) conducted a study to compare the characteristics of farmers' market shoppers with those of non-shoppers. The research revealed that while convenience is a primary reason for not purchasing at farmers' markets, consumers prioritize quality and price when buying produce. Additionally, Govindasamy and Nayga, Jr. (1996) investigated the characteristics of direct market customers to identify distinct features of farmer-to-consumer direct market consumers. Their findings showed that, on average, direct marketingfacilities received between one and two visits per month, with an average expenditure ranging from $11 to $19 per visit. Furthermore, the investigation concluded that direct marketing facilities offered better-quality vegetables compared to supermarkets.

Govindasamy (1998) examined the resurgence of farmers' markets in New Jersey, which was welcomed by farmers, consumers, and municipalities. The study found that this resurgence resulted in increased income for farmers, while also satisfyingconsumers' needs for fresh, high-quality goods and farm-based recreational activities. Consequently, farmers were able to capture a larger portion of consumers' food expenditures. The majority of these markets were located in suburban areas close to metropolitan areas, allowing them to serve both populations effectively. The study identified several factors influencing the selection of market locations, including visibility, ample parking, easy accessibility and traffic flow, available space for farmers' stands, proximity to downtown areas, the number of potential customers, safety, and the use of public land for insurance and financial reasons.

Raja Sekaran (2000) along with Prabhu, Venkata Prabhu, and Ravi proposed recommendations for improving the performance of Uzhavar Sandhais. They suggested that the marketing committee of these sandhais should expand their offerings to include food grains and cereals, in addition to vegetables. Furthermore, they recommended the establishment of cold storage facilities on the premises to maintain the freshness of the produce. The authors also proposed that the government issue directives to hostels, tourist centers, and hospitals to procure vegetables from

Uzhavar Sandhais, where prices are typically lower. Their conclusion emphasized the importance of educating farmers on maximizing the benefits of utilizing Uzhavar Sandhais effectively.

Krishna Murthy (2000) highlighted the significant benefits of UzhavarSandhais, the farmers' markets in Tamil Nadu. He reported that shortly after the inception of these markets, farmers experienced a doubling of their income. This increase was attributed to the elimination ofexpenses related to handling and marketing their produce. Direct marketing to consumers played a crucial role in this income rise. Murthy also noted that consumers benefited from purchasing vegetables and fruits at wholesale prices, typically half the retail price in the open market. Moreover, consumersenjoyed access to fresh produce brought in daily by farmers, ensuring quality and freshness. Additionally, the use of standardized balances and weights provided by the marketing committee ensured accurate measurements, enhancing consumer trust and confidence.

Jairath (2000) conducted research in arid regions of India to evaluate marketing infrastructures, their geographical distribution at the micro level, and proposed measures for strengthening them.The study revealed that only 10 districts in Rajasthan State had separate wholesale regulated markets for fruits and vegetables. Each fruit and vegetable market, on average, served an area of 24,500 sq.km in this state. To address this issue, the State Government was recommended to introduce direct marketing from producers to consumers by implementing the 'Apna Mandi' concept from Punjab. The existing cold storage capacity was approximately 68 thousand tonnes, which was insufficient compared to the quantity of fruits and vegetables produced. Jairath emphasized the necessity of robust marketing infrastructures to provide better prices to farmers and ensure high-quality commodities for consumers at reasonable prices.

Narasaiah (2001) conducted an analysis of the Rythu Bazaars in Andhra Pradesh, highlighting the active participation of small and marginal farmers in these markets. He noted their enthusiasm, as they appreciated the absence of taxes or charges for selling their produce, allowing them to directly bring their harvest from their fields. Additionally, farmers expressed satisfaction with avoiding the unpredictable pricing dictated by wholesale traders and intermediaries. However, Narasaiah also identified theneed for infrastructure development in Rythu Bazaars, as highlighted by farmers. They emphasized the importance of these markets being centrally located or conveniently accessible to consumers. Narasaiah recommended government intervention to ensure the efficient functioning of Rythu Bazaars to meet the needs of both farmers andconsumers.

Rajendran (2001) analyzed the challenges faced by the Uzhavar Sandhais, noting a severe shortage of manpower for tasks such as issuing identity cards, providingscales to farmers, and fixing vegetable prices, which hindered their smooth operation.He highlighted a common complaint across the market.Genuine farmers, who held identity cards, were not given sufficient opportunities to sell their produce. Moreover, small and marginal farmers struggled to delay

the sale of their harvest due to economic stress and immediate financial needs. Rajendran recommended that the government identify and address practical issues affecting the functioning of such schemes.

Raj Pravin (2001) conducted research to evaluate the strengths, weaknesses, opportunities, and threats of farmers' markets in Madurai district. He identified the major strengths of the Uzhavar Sandhai as providing remunerative prices to farmers, eliminating middlemen, maintaining a hygienic market environment, offering goodsanitation facilities, waiving entry fees, ensuring quick money transactions, providing free transport for goods, and ensuring transparency in market operations. However, he also noted several shortcomings, including limited availability of fruits, insufficient stallnumbers, lack of cold storage and shelter for consumers during the rainy season, limited operating hours in the morning, and absence of a standard grading procedure. Pravin recommended several measures for the development of Uzhavar Sandhais, including theestablishment of information centers to meet farmers' immediate needs, implementation of an electronic price display system, provision of seeds, manures, and fertilizers, sales promotion by self-help groups, and the introduction of banking facilities.

Varner and Otto (2008) developed a methodology to analyze aggregate consumer demand to evaluate the performance of Iowa's farmers' markets. They examined sales per vendor and sales per capita from a sample of 109 Iowa farmers' markets in relation to market, neighborhood, and regional factors. The study concluded that farmers' markets primarily serve as side hustles, generating supplemental revenue for vendors. Additionally, Iowa farmers' markets with higher sales per vendor or per capita tended to have more characteristics.

Dey, Subhendu. (2012) The farmers' market, a social initiative launched by the government of Andhra Pradesh, has placed the marketing system for fruits and vegetables largely in the hands of farmers. This initiative has resulted in second-round benefits for farmers in several ways. Keywords: middlemen, binomial statistical test, Rythu Bazaars, farmers markets.

METHODOLOGY

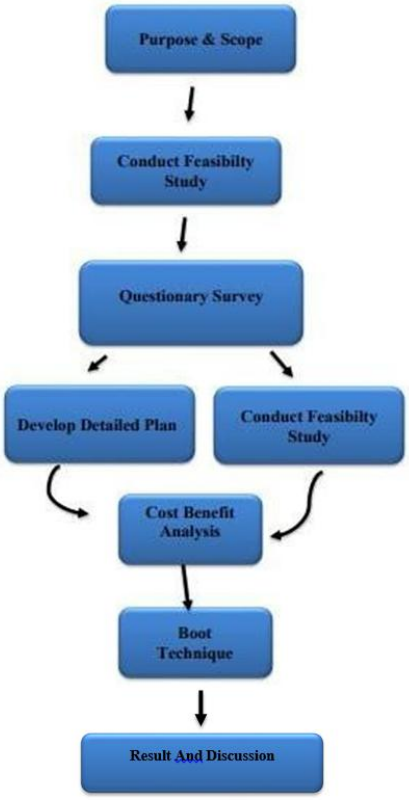

Fig 1.1 Methodology

QUESTIONNAIRE SURVEY

We did an online survey to hear what people in Periyanaickanpalayam, Coimbatore District, think about renovating the market. Within a few days, we received 109 responses from people living within 15 to 20 kilometers of the area. Our aim was to learn about the community's needs, likes, and expectations. From the survey results, it's clear that 88.1% of the respondents are happy with the idea of renovating the current market.

FEASIBILITY STUDY

The feasibility study for the proposed local market in Periyanaickenpalayam evaluates key aspects crucial to its success. Technical feasibility focuses on construction methods, materials, and infrastructure, such as steel structures with GI roofing and adequate spacing for smooth pedestrian flow. Financial feasibility assesses cost estimates, funding options, and revenue projections from vendor rentals and services, ensuring profitability and investor satisfaction. Market feasibility analyzes location advantages, capacity for foot traffic, and demand dynamics, essential for attracting vendors and sustaining consumer interest. Economic feasibility highlights the market's role in job creation, local economic stimulation through increased business activity, and

support for agricultural development, fostering community engagement and overall economic growth. Together, these assessments aim to ascertain the market's viability and its potential contributions to the economic and social fabric of Periyanaickenpalayam and its surrounding areas.

PLAN

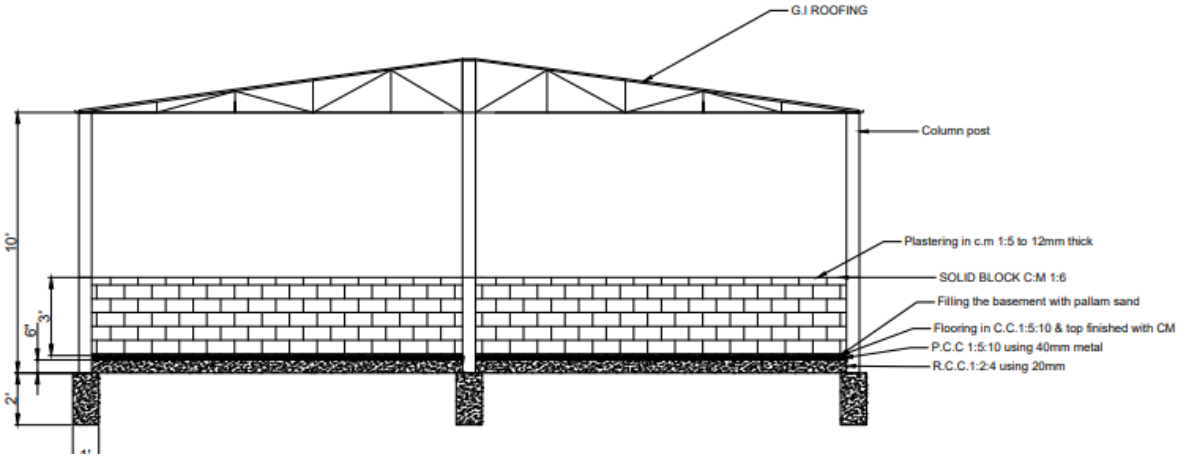

Fig 1.2 Cross section

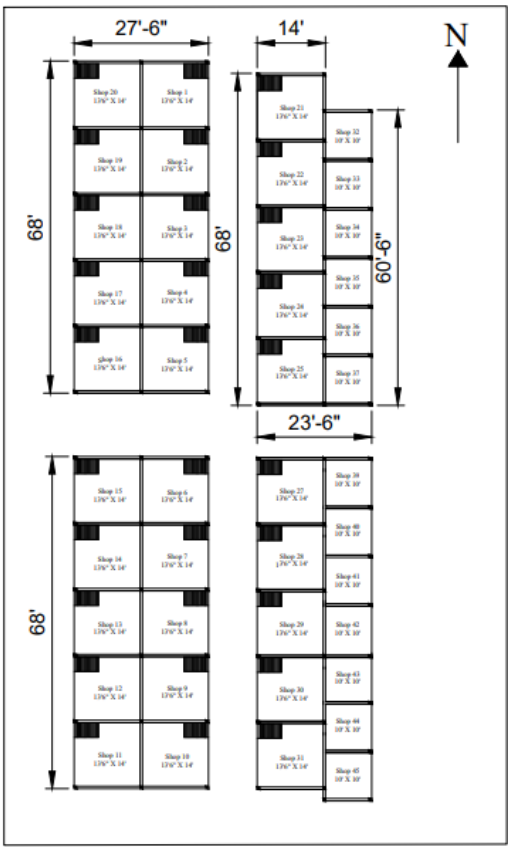

Fig 1.3 Building Plan

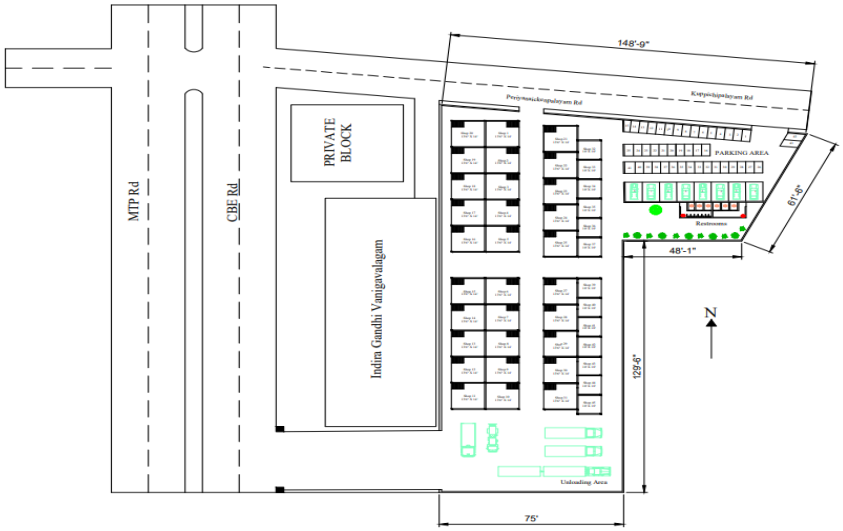

Fig 1.4 Layout plan

CONSTRUCTION COST

The estimated amount for the renovation project of the local market in Periyanaickenpalayam is ₹59, 38,847.96 including a 18% GST (Goods and Services Tax). This estimate considers the costs of materials, labor, permits, and any additional expenses required for the renovation. It is crucial to consider this budget while planning and executing the project to ensure that all financial resources are appropriately allocated and utilized.The construction cost also includes construction of toilets, tanks, plumbing utilities, installation of streetlights, electrical works, CCTV installations, Landscaping and even the cost of demolition of old structure has to be considered in the computation of the cost of construction. The funds for the project can be obtained from the Government fund or it can be obtained from the Smart city development funds.

Fig 1.1 The Traditional Market Vs Proposed Market

Specifications	Traditional Market	Proposed Market
Structure Type	Temporary One	Permanent One
Shelter	Tents	Permanent sheds
Ground Condition	Marshy lands	Paver Block
Road Function	There is no passage for Conveyance of people and materials.	New passages for Conveyance of people and materials
Road Congestion	Congested due to roadside accumulation	Clean and free shops for vendors
Passageways	Unauthorized tents	Neat passages
Lighting	Limited lighting during night sales	Streetlights and necessary lighting for each shop
Rainwater Management	No provision	Proper slopes for easy removal of rainwater
Sanitary facilities	Does not have proper sanitation facilities	Separate toilet areas for gents and ladies

Table 1.2 Abstrsct of estimetion

S:no		Description of Works	UNIT	Qty	Rate	Amount
1	Earth work Excavation	Earth work excavation with normal soil & levelling the excavated area including machineries & all labors charges.	C.ft	1221	12	14,652.00
2	PCC	P.C.C. 1:5:10 using 40mm metal including all labor charges	C.ft	794	125	99,250.00
3	RCC	R.C.C.1:2:4 using 20mm HBG jelly including centering, scaffolding, concreting curing ,etc completed	C.ft	539	465	2,50,635.00
4	RR Masonary	R.R. Masonary in c.m 1:6 using size stones including &all labour charges Walls allround (Toilet Block)	C.ft	473	135	63,855.00
5	Solid Block	Solid block for superstructure using c.m 1:6 including all labour charges etc	C.ft	2224	185	4,11,440.00
6	R.C.C work for toilet	R.C.C.1:2:4 using 20mm HBG jelly including centering, scaffolding, concreting curing ,etc completed	C.ft	16	465	7,440.00
8	G.I roofing	Roofing using Galvalum Sheet,steel truss including I-Beam ,bolts, nuts, Ridge, Gutter &all labour charges etc	S.ft	7220	195	14,07,900.00
9	Plastering Work	Plastering in c.m 1:5 to 12mm thick & all labour charges wall outside allround	S.ft	9415	58	5,46,070.00
10	Flooring	Flooring in C.C.1:5:10 & top finished with CM	S.ft	6970	145	10,10,650.00
11	Anti-skid tiles	Flooring in C.C.1:5:10 & top finished with 1'x1' anti-skid tiles	S.ft	195	215	41,925.00
12	Wall tail & Ceramic tiles	Wall Glazed tiles & ceramic tiles laying in cm 1:8 for	S.ft	1071	125	1,33,875
13	Provision for Electrical works				L.S	3,25,000.00
14	Provision for Overhead tank and Plumbing works withsanitary fittings				L.S	2,25,000.00
15	Provision for White washing & Painting with laborcharges				L.S	1,85,000.00
16	Contingencies , unforeseen items and Rain water harvesting arrangements				L.S	15,000.00
		Sub Total				50,32,922.00
		GST @18%				9,05,925.96
		Grand Total				59,38,847.96

COST BENEFIT ANALYSIS OF THE PROJECT (CBA)

Whenever a project is proposed it will have some benefits in terms of monetary values. Any project without this consideration is said to be futile in nature. The cost benefit is not only used for return of initial investment but also to carryout periodic maintenance work. Here the shops are charged on daily basis, and this prove to be efficient on the term that who occupies for the day should pay andignores the monthly rents which seems to be difficult for the seasonal flower vendors. The pay scales are set on minimal basis since the present system is not conservative and does not have proper action plan.

A shop is charged Rs. 150 on daily basis and it is hiked to Rs.400 during festivalor occasional seasons.

30 days in a month, considering 25 days to be normal and 5 days to be seasonaldays. 25 x 100 = 2500.Rs

5 x 525 = 2625.Rs

Total = 5125.Rs

A shop generates Average of Rs 5125 in a month.

25 x 50 =1250.Rs

5 x 400 =2000.Rs

Total = 3250.Rs

A shop generates Average of Rs. 3250 in a month.

So, for 45 shops

5125 x 31 = Rs.1, 58,875

3250 x 14 = Rs. 45,500

Total revenue for 1 month is Rs.2, 04,375.If the maintenance requires Rs.50, 000

Total revenue contributing to the initial investment is Rs.1, 54,345.Total cost for construction Rs. 59, 38,847.96

Annual cash flow = Total Annual Revenue - Total Operational Costs

Annual cash flow = ₹24, 52,500 - ₹6, 00,000

Annual cash flow = ₹18, 52,500

Payback period = $\frac{total\ construction\ cost}{annual\ cash\ flow}$

Payback period = 59, 38,847.96
18, 52,500

Payback period = 3.2years

NOI = Total Annual Revenue - Total Operational

Costs NOI =₹24, 52,500 - ₹6, 00,000

NOI = ₹18, 52,500

Return on Investment (ROI):

ROI = (Net Operating Income/ Total Construction Costs) × 100

ROI = (18, 52,500/59, 38,847.96) × 100

ROI = 31.19%

Calculated ROI is approximately 31.19% in Indian Rupee terms. A positive ROI indicates that the Market building is generating enough revenue to cover both construction and operational costs.

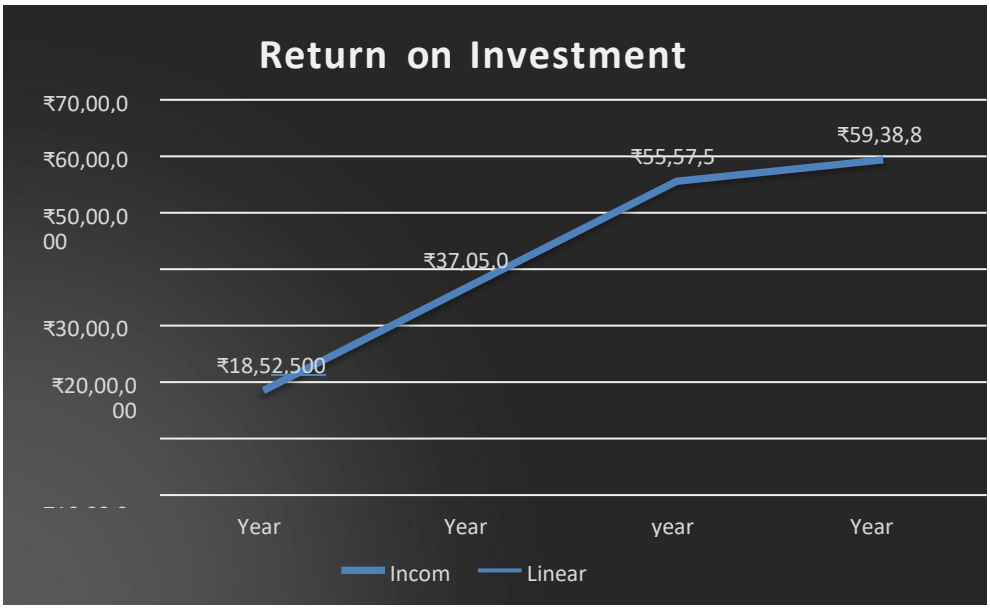

Fig 1.5 Return on investment (ROI)

RESULT AND DISCUSSION

The aim of our project is to enhance the current state of the market in our city by transforming it into a well-organized and well-planned facility that meets all necessary requirements and provides essential amenities. The solution to this problem involves investing time, money, ideas, and efforts, which will significantly benefit both buyers and sellers. Through improved infrastructure, enhanced aesthetics, and community involvement,

the renovated market will become a hub for economic activity and social interaction, while also serving as a significant income source for the city's government. The proposed plan addresses issues of congestion and commotion by eliminating unnecessary traffic caused by roadside vendors and providing parking spaces within the structure, thus promoting smooth traffic flow.

The market, which can accommodate large crowds during festive and occasional seasons, will provide vendors with permanent sheds and clean spaces, replacing temporary tent structures. The new system will generate revenue, unlike the old system, and elevate the standard of living by promoting infrastructure development. The economic benefits will manifest once the initial investment is recouped through periodic rents, which will also cover maintenance costs. Implementing the BOOT (Build-Own-Operate-Transfer) technique could simplify the process for the government by transferring construction risks to the private sector, facilitating easier monitoring, and promoting adjacent area development, leading to overall development.

CONCLUSION

Many local markets need to be updated because they are outdated and can't meet customers' changing needs. This includes improving facilities, updating infrastructure, and adding eco-friendly and energy-efficient features. As cities grow, new neighborhood markets are needed to serve the increasing population. Construction companies have the opportunity to build new markets in prime locations.In planning these markets, functionality and sustainability are top priorities. Using advanced technologies and equipment, future buildings will be more organized and efficient, moving towards environmental goals. These projects will help various areas in the state grow, benefiting the overall economy.Local markets can be part of mixed-use complexes that include homes, shops, and recreational spaces, creating lively community centers that attract residents and visitors. Maintenance is crucial for keeping these places attractive and functional, and the income generated will help with this. Working on these projects will lead to more innovative market designs with wider, cleaner corridors, meeting future needs.

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