Integrating Food into Urban Planning

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Formalisation of fresh food markets in China
The story of Hangzhou
Shuwen Zhou

Fresh food markets are markets where grocers gather to sell vegetables, fruit and meat, among other things. The formalisation of fresh food markets is the process of replacing informal street food markets with markets accommodated in a fixed and organised space where only licensed food dealers are allowed to sell food. Today, formal food markets are typically designed with up-to-date equipment for food transportation, storage and processing, and operated by modern business management.

In China, the formalisation of fresh food markets started in the late 1980s when the Chinese economy had transitioned from a planned economy to a market economy. The population of Chinese cities began to grow quickly at that time. The management of public health and traffic in cities became matters of increasing concern to local governments. In some cities, cleaning up street markets became one of their priorities.

Hangzhou is a provincial capital city, famous for its tourist attractions, and was one of the Chinese cities that led the wave of formalising street food markets. Though the efforts to clean up street markets failed in many other Chinese cities, Hangzhou completed this process in its urban core districts in the 1990s. It then completed two rounds of renovation of food markets under the requirements of the Shopping Basket Programme (SBP), and constructed two wholesale markets for agricultural products, which eventually established a more accessible, healthier, safer and more affordable food distribution system in the city. This pleased the old and middle-aged people who had lived in this city for their whole life and
witnessed the changes. Based on interviews with residents, government officials, planners and food traders, this chapter will discuss Hangzhou’s experiences and the impact of its fresh food market formalisation.

12.1. Street markets in China and their formalisation

Street markets in Chinese cities have played a significant role in food distribution. During the planned economy period, between 1949 and 1978, resource distribution was stringently under government control, and so was food. In cities, the government managed formal food markets. People working in food markets and selling food were employed as staff by the government. Individual groceries were illegal. During the 1980s, after China started opening up its policies and freed up control of food distribution, street markets emerged rapidly to fill the supply–demand gap in quantity, variety and location that had been generated by the food distribution system under the planned economy.

However, with the development of Chinese cities, a desire for better shopping environments and for a better city image developed among city managers. Traffic issues caused by shopping crowds and food sellers made street markets potential eyesores in the eyes of many city managers. Moreover, food traders’ dishonesty in doing business caused accumulated resentment among local people. Many Chinese cities started to clean up street markets and expel street food dealers. But, for a lack of alternatives and strong enforcement, many of these efforts failed. Street markets still have strong footholds in many cities.

12.2. Fresh food market formalisation in Hangzhou

12.2.1. City profile of Hangzhou

Hangzhou is the capital city of Zhejiang Province. It is located 202 km south of Shanghai. Although it is the economic, political and cultural centre of the province, it is also a national tourist destination, famed for its scenic and historical attractions. Its metropolis encompasses nine urban districts, two county-level cities and two counties, covering 16 596 km² (see Figure 12.1). Its five core urban districts – Shangcheng, Xiacheng, Jianggan, Gongshu and Xihu – constitute Hangzhou City, covering 610 km² (Hangzhou Statistical Information Net 2018). As of 2017, Hangzhou has long-term residents of 9.19 million, among which seven million live in urban areas (Hangzhou Statistical Information Net 2018).
Figure 12.1  Hangzhou urban core districts and the distribution of fresh food markets after formalisation. (Source: Shuwen Zhou)
Hangzhou’s GDP growth rate has long been maintained above eight per cent, placing the city in the lead of the country’s economic development. Its annual fiscal revenue increased by 14 per cent in 2016 to reach US$39.4 billion. Urban residents in Hangzhou earn a mean annual disposable income of US$8039. Annual per capita living expenditure exceeds US$5500. Average life expectancy in Hangzhou has reached 82.08 years (Hangzhou Statistical Information Net, 2018). The unemployment rate was 1.72 per cent at the beginning of 2017 (Hangzhou Statistical Information Net, 2018).

12.2.2. Formalising street markets and Hangzhou’s development goal


Against this backdrop, the formalisation of food markets in Hangzhou was part of the strategic plan to achieve the city’s development goal, because street markets, which were often smelly, flooded by muddy water, and a cause of traffic problems, had been seen as a bane of the city. In the mid 1990s, HMG listed food market formalisation in its ‘Projects for People’s Livelihood’ and appointed Hangzhou Municipal Commission of Commerce (HMCC) (formerly Hangzhou Grain Bureau) as the leading and coordinating institution. Involved governmental agencies included Hangzhou Planning Bureau, Hangzhou Municipal Bureau of Market Supervision and Administration, Hangzhou Municipal Bureau of Public Health, Fire Department of Hangzhou Municipal Public Security Bureau and Hangzhou Municipal Bureau of City Management and Administrative Law Enforcement.

Three strategic components were directed towards food market formalisation: cleaning street markets, reforming and enlarging state-owned markets and building spacious new fresh food markets. These
three elements applied in different ways to different areas of the city. Cleaning street markets was a citywide project. In the oldest downtown area, where facilities were already well established, the strategy was to reform and enlarge state-owned food markets and let the space to street food dealers. In the newly developed areas, the strategy was to build new markets and rent out the slots.

It was necessary to expand the state-owned fresh food markets because the city’s population growth demanded larger spaces where food was on sale than the old markets could provide. Before the 1990s, in downtown Hangzhou the distance between two state-owned markets was around 500 to 1000 m, and easily travelled, but the markets were small in size. Neither the quantity nor the diversity of food in these markets could meet people’s needs. Street markets were complementary to the state-owned markets in this sense.

The citywide formalisation of the food markets in practice needed larger formal spaces. This was facilitated by the citywide urban renewal during the late 1980s and the 1990s, which literally flattened pre-existing residential areas and relocated or temporarily relocated hundreds of thousands of residents, and thereby allowed the spatial organisation of basic urban facilities to be standardised as required to develop a modern city. By 1999, Hangzhou had cleaned up all the street food markets in its urban core districts.

12.2.3. The Shopping Basket Programme and two rounds of food market renovation

After formalising the street markets, Hangzhou carried out two further rounds of renovation, which were oriented by food safety issues and responded to the SBP initiated by the central government. SBP is a comprehensive programme launched by the Ministry of Agriculture (MoA) in 1988 to deal with food production, supply, trading and distribution, as well as food safety. Its objectives are to bring up food production to meet demand for quantity and nutrition, to stabilise prices, to improve hygiene in distribution and to prevent disease. City mayors are the only persons accountable to this initiative.

Since its initiation in 1988, SBP has experienced four stages. The first stage was between 1988 and 1994, when filling the supply–demand gap in urban areas was the primary task. China having been a planned economy before 1978, when the government strictly controlled the distribution of food in urban areas, in 1988 the food supply fell far short
of the demand in Chinese cities. In 1994, five years after the initiation of SBP, 2000 food wholesale markets were built over the country, and food distribution systems were set up connecting farmers, dealers and consumers. The second stage was between 1995 and 1999, when coverage was extended from urban to suburban areas. At the end of 1999, the food supply in China as a whole attained a balance of supply and demand. From 1999, SBP entered its third stage, when food safety was highlighted.

Food safety issues pushed China to standardise and modernise its food markets under the SBP framework, which meant equipping food markets with standard design and examination, preservation and processing facilities. Besides offering distributive space to supply food, food markets became a battlefield for food safety. Progress has varied among cities owing to different development contexts. Two Chinese cities in coastal developed areas pioneered the transformation and become models for the rest of the country. The Fuzhou model essentially means introducing supermarkets to replace traditional food markets (Zhang 2007) whereas the Shenzhen model means renovating and modernising existing fresh food markets in downtown areas and introducing supermarkets in newly urbanised areas (Zhang 2007). The Hangzhou model emphasises improving and upgrading the infrastructure of fresh food markets in urban districts and introducing supermarkets as an alternative.

The two rounds of food market renovation were between 2006 and 2009 and between 2013 and 2014. There were four key elements. The first was improving and standardising the design of sewerage and ventilation systems. The second was devising markets with food preservation equipment. The third was installing electronic screens publishing daily food prices. The fourth was setting up a chemical residuals examination office in all markets.

In the two rounds of renovation, 147 fresh food markets were renovated. The total floor area under operation that was completed was 352,650 m². The average business floor areas was 2399 m² (Hangzhou Grain Bureau 2015). Additionally, a rating system was introduced to review fresh food markets, which gave incentives to each food market to maintain and improve its service, environment and management (see Figure 12.1).

HMCC was again the coordinating organisation during the two rounds of renovation. Extensive public participation was integrated into planning processes, as well as the relevant government departments. In the second round of renovation, for example, to make a plan HMCC carried out a citywide survey and resource mobilisation and organised several consultations about locations and designs of food markets. Besides
specialists from relevant government departments, representatives from existing markets (state-owned food markets) and community committees, as well as residents’ representatives, were invited to participate in the planning process. They together made a specific innovation plan for each market. Local community members were involved in the supervision of renovation projects. One hundred and forty-one people, in total, living in neighbourhoods close to the renovated food markets were organised as a team that was invited to supervise the process of renovation and market operation (Hangzhou Grain Bureau 2015). Members included staff from community committees, residents’ delegates, representatives of people’s congresses and members of the local democratic deliberation committee.

12.2.4. New city master plan and two giant wholesale markets for agricultural products

In 2001, Yuhang and Xiaoshan – two county-level cities in Hangzhou Metropolitan Area – were merged into Hangzhou City as two districts. In the same year, Hangzhou’s new 20-year master plan, from 2001 to 2020, was published, covering nine urban districts, 3068 km². In the new plan, Hangzhou set three new development priorities: (a) the economic, cultural and education centre of Zhejiang Province; (b) a core city of the Yangtze River Delta Urban Agglomeration; (c) a national historical and cultural city and an important tourist destination (Hangzhou Planning Bureau 2001). The name ‘Greater Hangzhou’ was proposed to symbolise the expansion of Hangzhou’s core urban districts and the strategies for accelerating urbanisation. The new plan estimated the population would reach 4.45 million in the urban districts by 2020, accounting for 83 per cent of the metropolitan area’s total population. An area of 369.92 km² of land was to be converted from rural to urban use.

To provide an efficient and safe food distribution system for the forthcoming high-density urbanisation to be accommodated in the expanded urban area, between 2005 and 2012 Hangzhou constructed and opened two giant wholesale markets – Hangzhou Logistics Centre for Agricultural Products (‘Gouzhuang Market’) and Zhejiang Xinnongdu Logistics Centre (‘Xinnongdu’). Some old markets were relocated and merged as part of the aim that the food distribution system should support community-based fresh food markets all around the city.

Gouzhuang Market was opened in 2008 (see Figure 12.2). It is located at the northern gate of Hangzhou, next to the Nanzhuangdou Toll Gate of Hangzhou–Ningbo Motorway, and is the largest agricultural
Figure 12.2  Gouzhuang overview (1:25 000). (Source: Shuwen Zhou)
products trading market in China, occupying over 400 hectares. The market is composed of nine special zones, of which seven are specialised markets for meat, fruit, vegetables, aquatic products, grain and oil, non-staple foods and frozen foods. Besides wholesale, the other two accommodate storage and processing, as well as delivery services. In 2013, over 70 per cent of the food in the dishes of Hangzhou’s residents was distributed from there (Hangzhou Daily Press Group 2013).

Xinnongdu was opened in 2012. It is located on the southern periphery of Hangzhou City, occupying 30 hectares. The centre comprises a non-staples market, an aquatic products market, a market for vegetables and grain, a market for branded products, a conference and exhibition centre and a supporting service zone. Whereas Gouzhuang Market serves the food distribution needs of the north of the city, Xinnongdu offers easier access for the southern part of the expanded Hangzhou.

A monitoring system has been introduced in both of the wholesale markets to ensure food safety. The two wholesale markets import food directly from food producers, record and examine everything entering or transferring through the market and distribute the certified and tagged products to food markets in the community. Testing results for most goods are retrievable within 24 hours.

12.2.5. Formalisation and regulatory plans

As we have seen, the strategies of formalising the fresh food markets in Hangzhou consist of cleaning up the street markets, reforming and enlarging the state-owned ones and developing new facilities. The last two strategies require a substantial amount of new space. As land use in Chinese cities has to comply with city regulatory plans, which are consistent with city master plans and other planning guidelines, and are de facto laws, complexities often arise during implementation.

One of the planning guidelines is the Norms for the Planning and Design of Urban Residential Areas (hereinafter ‘the Norms’). The first Norms was issued by the Ministry of Housing and Urban–Rural Development (MOHURD) in 1994. It suggests that 1500–2000 m$^2$ be prepared for food markets in neighbourhoods with populations of 30 000 to 50 000, and 500–1000 m$^2$ in neighbourhoods with populations of 10 000 to 15 000 (Hangzhou Grain Bureau 2015). This standard was to ensure that people in cities would have easy access to food markets after the formalisation of fresh food markets. Such standards are reflected in the regulatory plans that land developers have to follow.
The expansion of old markets and the new developments have to employ different methods to meet the standards. The implementation of expansions in Hangzhou is commonly led by the jiedao (neighbourhood/ward offices). As little space is available in the old city centre, the expanded spaces usually use land allocated in regulatory plans for public use, such as public green spaces and roads. The development of new markets, typically in areas that will soon be developed according to the government’s development plan, is led by private developers who have procured land development rights. As the development of public service facilities is not so profitable to private developers, HMG subsidises such development in various ways, such as the relaxation of restrictions on floor area ratio (FAR) – i.e. the ratio of a building’s gross floor area to the area of the land upon which it is built – or the use of side-street residential spaces for business. Upon the completion of construction, developers hand over the management of the facilities to the government.

12.3. Changes brought by the formalisation of fresh food markets

12.3.1. Improvements in markets’ accessibility and capacity as well as food variety and safety

The formalisation of food markets in Hangzhou brought a set of changes which include better accessibility and greater market capacity. Food markets became easier to access from both a locational and a temporal perspective. The number of food markets in Hangzhou’s urban core districts increased to 177 from approximately 100. On average, every 5 km² has one formal food market, which means that a resident of Hangzhou need walk for 10–15 minutes at most to buy food. The changes were significant in areas that later became urban core districts, where the development of infrastructure was lagging.

Meanwhile the time during which it is possible for people to buy food has been extended. The opening hours of street markets were short. There were normally two opening periods: morning peak time and afternoon peak time. Usually, the food dealers came to sell food at around 6.00 a.m. They left at around 10.00 a.m. after most people had started working. In the afternoon, street markets did business from 3.30 to 6 p.m. Since formalisation, food markets have opened from 6 a.m. until 6.30 p.m. This has made food shopping easier for people of different age, gender and occupation.
The capacity of food markets increased considerably as well. After formalisation, the average floor area of the food markets in Hangzhou reached 2399 m² (Hangzhou Grain Bureau 2015), which exceeded national standards. At the end of 2006, there were 171 food markets with 42,996 slots under operation, run by 27,363 food traders. The total floor area was 589,538 m² (Hangzhou Grain Bureau 2015). Correspondingly, the amount of food that could be sold in markets increased. Street food markets have less quantity and variety because of the limits of space. As the food can only be laid out in a limited space in the street, for which the sellers compete, each seller is unable to buy in very much food or offer much variety. Formalised food markets offer fixed spaces for food retailers. They can buy in larger amounts of food to fit into their prepared space (see Figure 12.3).

The variety of food significantly increased after the opening of the wholesale food markets. In Gouzhuang Market, 40 per cent of the products are from Hangzhou Metropolitan Area and neighbouring areas within a radius of 200 km. The other 60 per cent are transported from more distant parts of China or even from overseas. For instance, leeks are from Shandong Province, peppers from Haiyan in Henan Province and seafood from Zhoushan, a seaside city 250 km to the north of Hangzhou.

The assurance of food safety has also been remarkably improved by market formalisation. First, the testing and monitoring system introduced in the wholesale markets makes it possible to control food safety at the primary stage of distribution. Second, formalisation of fresh food markets at the community level has helped to enforce laws and regulations about

![Image of vegetable zone of Dongshan Fresh Food Market](source: Shuwen Zhou)
Food security, hygiene, sanitation, disease management and trade fairness. After market renovation, each food market is equipped with a special office to test chemical residuals in fresh food (see Figure 12.4). Consumers can just walk in to check whether the food they have bought and put in their basket is safe. This facility fills the gap for testing and monitoring the food produced on local farms, which does not have to pass through the wholesale markets. Every market is also equipped with an electronic scale. This is to combat some cheating tricks practised by food dealers. And every market regularly provides reviews of food traders. Consumers participate in monitoring food safety. Furthermore, since the second round of renovation, fresh food markets in Hangzhou have not been allowed to sell live poultry. Poultry must be well cleaned and preserved before being sold.

12.3.2. Social costs of market formalisation

Though the formalisation of fresh food markets in Hangzhou has achieved great success in general, it has not been exempt from adverse consequences. Higher financial and time costs, and exclusion of economically and physically disadvantaged groups are the key issues.

12.3.2.1. Higher economic cost
Food in formalised neighbourhood fresh food markets is in general 50 per cent more expensive than in informal ones. For instance, bean
sprouts priced at US$1 per kilo in street markets may be sold at US$1.50 per kilo in formal fresh food markets. The increase in food price reflects the cost increase in market management and human resources. The retailers have to pay rent to the formalised markets to cover the cost of market maintenance and the market manager’s staff. The scale of price change depends on the management and ownership of the markets. In Hangzhou, formalised fresh food markets are owned by local community committees (jiedao – governmental entities at neighbourhood level), but often the operation rights are subcontracted to individuals, or owned by multiple stakeholders including the jiedao. Subcontracts allow the professional management of fresh food markets, but substantially raise the cost of renting.

Besides the cost of market management, expenditure on human resources and transport also increases in most cases. Many of the retailers who could be part-time traders selling food only during the morning and afternoon peak times have had to be full-time workers to look after their slots since formalisation. Some have to employ more people. Transport cost has grown because of changes in means of transport. Among street market traders, man-powered tricycles or carts are popular. The retailers can use cheap man-powered carts to carry food, and they can sell food from their carts in the streets. Since formalisation, the traders have had to use fuel-powered vehicles. Consequently, the consumers have to absorb increased prices.

12.3.2.2. Increased time cost

Besides bearing price increases, consumers also face increases in time cost. Before, consumers could buy food while they were walking or cycling home. Since formalisation, shopping time has increased owing to the need to find somewhere to park and to food being scattered in different corners, or even on different floors, of the markets. Moreover, life has got less convenient for some communities that have had to endure market relocation during processes of formalisation and renovation. As fresh food markets attract a flow of people, their surroundings are often the hub of various commercial facilities such as shoe repair, laundries, restaurants and so on. Relocations destroy the previous business ecosystem of a neighbourhood. Hangzhou’s Sanliting Fresh Food Market is one example, which was relocated in 2008 after more than a decade of history. In Sanliting, after the relocation the nearby shops spontaneously closed down, including many restaurants. Local residents have had to find their own solutions and to walk further to buy food.
12.3.2.3. Exclusivity

Increased financial and time costs, in the end, lead to the exclusion of economically and physically disadvantaged groups, among both traders and consumers. From the economic perspective, higher rent excludes low-income traders, and higher price excludes low-income families. For the retailers, informal fresh food markets are exclusive in their own way, but the formalisation of fresh food markets led to ‘formal exclusion’. In Hangzhou, as the space available in the street is limited, street markets often have their own informal rules set by some traders to exclude others. It was observed that food retailers who had arrived early on in a market’s history would ask for occupation fees from latecomers. The formalisation of fresh food markets generated more space and institutionalised the renting of space; however, it produced fee-based formal exclusion. Retailers who have found renting and full-time business too expensive and chosen to stay in streets have had to be alert to urban management officers (chengguan). Often, evictions end with violence. For low-income consumers, food has become less affordable. This is especially true in the urban core, where the elderly and low-income residents are concentrated but lower-cost alternatives are absent.

From a temporal perspective, higher time costs make shopping experiences worse for the elderly and the physically challenged. Equipping markets with ancillary staff helps, but does not remove the problems.

12.3.3. Emergence of different forms of food markets

The formalisation of food markets in Hangzhou continued with the introduction of supermarkets, hypermarkets and greengroceries. Outside urban core districts, as the enforcement of erasing street markets is relatively weak, informal food markets still exist, besides the above-mentioned kinds of food markets. They complement the formal fresh food markets with respect to freshness, variety, location, mode of shopping and, among other things, the needs of different social groups.

The freshness of food depends on the time of the day. In general, food is fresher in formal fresh food markets than in supermarkets or greengroceries, owing to a faster cycle of selling and supply. Formal fresh food markets are more likely to sell out of something the same day it is delivered, whereas supermarkets and greengroceries have a longer stocking cycle.

The variety of food generally improved in urban core districts after food market formalisation, but in the suburban areas where street food
markets still exist the latter provide more choices. At Liuxia Fresh Food Market, where a street food market occupies the market’s outdoor space, fresh food that is not sold in the formal market can be found outside in the street market – produce such as Chinese yam and coriander leaves. Formal fresh food markets tend to sell food that is procured from the wholesale market. But street markets allows peasants who live in nearby villages to sell food themselves. Supermarkets attract people by selling a very wide range of products and food, especially processed ones such as pizza, noodles, juice and milk.

Location and walking distance play a significant role in people’s preference for the types of food markets they use. When the nearest place is a greengrocery rather than a fresh food market, people sometimes trade off freshness for a shorter distance to travel. When the closest is a supermarket, people tend to prefer the supermarket for everyday food. Residents who have a car are less constrained by location.

With the rapid development of e-commerce in China, especially in Hangzhou – the home of Alibaba, the largest e-commerce company in China and the second largest in the world – buying fresh food through e-channels is becoming popular. According to in-app data, before mid January 2018 87 supermarkets had registered on E’lema, one of the most popular e-platforms for food delivery. Seven of them are fresh food markets. The vendor holding the highest monthly sales record received an average 5964 orders per month in 2017.

12.4. Conclusion

The formalisation of fresh food markets in Hangzhou has significantly changed everyday life in the city. From cleaning up all the street markets in the core urban districts, to renovation, and finally the completion of wholesale food markets connecting food production and distribution, it has incrementally transformed the city’s food distribution system to one providing greater accessibility, capacity, variety and safety. Today in Hangzhou, formalised fresh food markets are the primary locations where residents buy food, complemented by other kinds of food markets that differ on location, price and variety.

To achieve this, a firm political will may be seen as key. In the early stages of formalisation, improving the city’s image provided the momentum. In the later stages, SBP and ambitious new city development goals played a significant role in mobilising the local governor’s political will.
Backed by political will, the involvement of different actors pushed the transformation to go further. Especially in the second round of renovation, a specific renovation strategy formulated for each market, through consultation with different governmental departments and residents, facilitated implementation and finance. The good balance between rigorous enforcement of the regulatory plan and flexibility in land use approval eventually created a success story.

However, a social cost was not avoided. Higher financial and time costs led to some exclusion of economically and physically disadvantaged groups. Both food traders and consumers are affected. For the traders, there has been an increased financial burden to fund market management, human resources and transport. The city’s residents have had to absorb this cost. Traders who have less initial capital are thereby excluded from opportunities to earn a living. Those who choose to carry on selling food in the streets suffer confronted eviction from time to time. Low-income people are now able to buy fewer types of food and obtain less daily nutrition.

Although there is indeed a need for alternatives to compensate this social cost, new issues emerging in Hangzhou need equal attention in order to prevent any regression in the battle to maintain food safety. As rents are increasing in Hangzhou’s urban core districts, and as the widespread practice of subcontracting in the operation of formal fresh food markets is pushing up management costs, food prices are expected to continue rising in the coming years. Online shopping for fresh food has emerged as an alternative responding to the increasing financial and time costs of using the formal food markets. Some fresh food markets even face the possibility of shutting down because of decreasing profits. On the one hand, urban residents enjoy the convenience brought by e-commerce; on the other hand, food safety may be at risk owing to the lack of monitoring system. Government regulations on food safety must catch up with the rapid growth of the online fresh food shopping sector. Otherwise, Hangzhou may eventually regress in both market accessibility and food safety.

Notes

1. ‘National City of Cleanliness’ is hosted by the Department of Diseases Control, Ministry of Health. The first award of this title went to Weihai City, Shandong Province, in 1990.
2. The estimation is based on the calculation adopted by the Fifth National Census.
3. MOHURD’s predecessor was the Ministry of Construction of the People’s Republic of China (MoC), which was reconstructed and renamed in March 2008.
4. Hangzhou’s local standards are consistent with national ones.
References


