

Developing Public Rental Housing on Rural Collective Construction Land in Shanghai Suburbs: A Case of Cao'an Village in Jiading Industrial District

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1 ABSTRACT

Since the 1990s, it is an obvious feature of Shanghai suburbs that the spatial urbanization lags behind the industrialization, with thriving demands for housing from domestic immigrant workers. By contrast, the villages surrounding the industrial area undergo an aging process continuously, with the youth moving out of the village and many rural houses left vacant, expecting new developing opportunities and vitality urgently. If the demands from both sides can not be coordinated or guided, the indigenous villagers would likely construct or enlarge the owner-occupied houses illegally arbitrarily and rent them to the immigrants, resulting in the deterioration of the living environment and social conflicts in the village.

In 2017, the national policy "Pilot Scheme for Building Rental Houses on the Collective construction land" was released, in which Shanghai was selected as a pilot city. In this background, this paper aims to examine the necessity and feasibility of building public rental houses (abbr. PRH) on the rural collective construction land¹ (abbr. CCL) in Shanghai suburbs and propose appropriate strategies for it. The paper first summarizes relevant experience from villages in Dongguan and Beijing via documentation. Then combined with the author's practice of Master-planning in Jiading Industrial Zone in Shanghai, with a local village named Cao'an as the case, this paper evaluates the necessity and feasibility of constructing public rental houses in Cao'an village respectively from the village's status quo of development and the opportunities offered by its special location. Finally, drawing on the experience of Dongguan and Beijing, corresponding strategies regarding the construction of housing-supply-system and subsequent development are proposed. This paper aims to discuss whether it's possible to, and how to use rural land reasonably to resolve the supply-demand contradiction of housing in the context of rapid industrialization of suburbs in developing countries, guide the orderly construction of suburbs, and prevent villages from becoming informal settlements.

Keywords: Suburb, Public Rental Housing, Rural Collective Constructing Land, Shanghai, Rural Development

2 BACKGROUND

2.1 Leading Industrialization vs. Lagging Urbanization in Suburbs

After the 1990s, the scale of Shanghai's cities expanded rapidly, and the suburbs gradually showed an obvious characteristic that the urbanization lagged behind the industrialization, with numerous small- or middle-scaled factories located in villages and towns. By 2005, the average proportion of the secondary industry in Shanghai suburbs had reached 61.2%, and some towns have even reached 80% (Luo, 2007).

The large-scale conversion of agricultural land to industrial land has promoted the rapid growth of construction and the number of residents, and brought about a change in the employment mode: By 2007, although the registered urban population² in Jiading District accounted for only 30.2% of the total population, the actual employment rate in non-agricultural sectors has exceeded 90%; Even in suburbs at the edge of the city, the employment rate in the agricultural sector is still less than 1/3 (Luo, 2007). This change in employment has brought some benefits to rural residents, but also put pressure on rural communities: Limited public resources need to be shared with a large number of new-coming residents, and the shortage of housing is particularly prominent.

¹ Rural collective construction land refers to the land held and managed by the village collective and can be used for non-agricultural activities, namely construction. It mainly includes homesteads, land for infrastructures, and land for business. Its counterpart is farmland.

² Chinese statistic population used to be mainly divided to urban registered residents and rural registered residents, according to where they were born. It is thought as a significant factor for Chinese rapid development that a great deal of rural registered population came to cities for non-agricultural jobs.

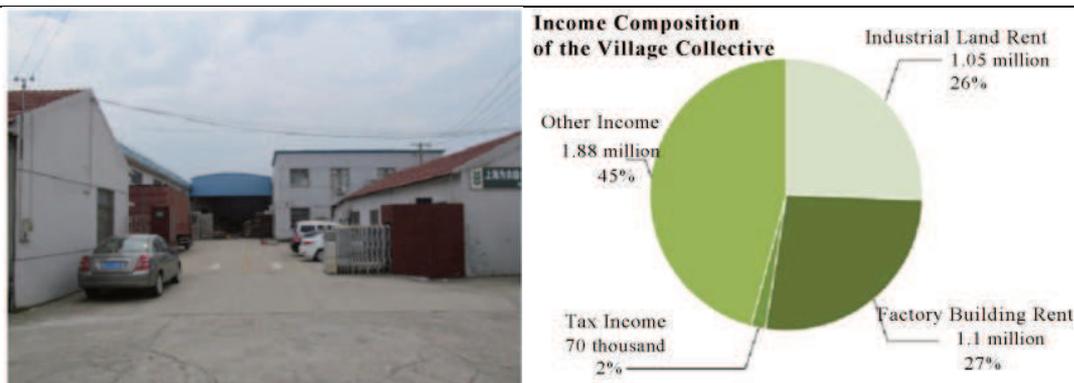


Fig. 1: Industrial Enterprises in the Village and the Income Composition of the Cao'an Village Collective (Source: Author)

2.2 Misalignment of the Strong Housing Demand and the Vacant Rural Houses

On the one hand, the number of industrial employees in the suburb (especially young technicians and migrant workers from other cities) has risen sharply, while the number of dormitories that employers can provide is limited, and, therefore, regional demand for rental houses is particularly strong. On the other hand, the youth in the villages surrounding the industrial area is relocating, and the rural area shows a serious trend of "hollowing out" and aging. Many rural houses remain vacant, and new opportunities and vitality for development need to be triggered and brought in. There exists a clear misalignment between these two aspects.

If the needs of these two aspects cannot be well-coordinated, guided and fulfilled, the in-situ industrialized areas³ are prone to see a "chaotic phenomenon" where indigenous villagers spontaneously build new or expand existing private houses on the collective land, and rent them to the new-coming residents. A typical case is Shipai Village in Guangzhou. When commercial housing was not developed on a large scale in the early 1990s, cheap rural houses in the suburb became the primary accommodation for many migrant workers who came to Guangzhou, one of the first opening-up cities in China. Driven by economic benefits, the villagers quickly demolished the original one- or two-story brick-concrete houses and converted them into a six- or seven-story buildings of reinforced concrete, the interior space of which was divided into several small rooms for rent to migrant workers. More than 3,500 buildings crowded on just 0.7 square kilometers of land. The 170 small alleys that were only 3 meters wide and narrow enough to allow only one person to walk were sunk in the dim shadow of buildings, with merely "a skin line of the sky" above. The village has become a "scar" of the city, with tough public security and a harsh environment.

2.3 Policy Support for Development of Public Rental Housing in Rural Collective Construction Land

In September 2011, the Chinese General Office of the State Council issued the document of "Guiding Opinions on the Construction and Management of Affordable Housing", which highlighted the development of public rental housing. After that, the Chinese Ministry of Land and Resources approved Shanghai and Beijing as the first batch of pilot cities for developing public rental housing on the collective construction land. On August 21, 2017, the Chinese Ministry of Land and Resources and the Ministry of Housing and Urban-Rural Development issued the "Implementation Scheme for the Construction of Rental Houses Using Collective Construction Land" and identified 13 pilot cities including Beijing and Shanghai. In September 2018, Shanghai issued the "Announcement on the Transfer of the Use-Right of Rural Collective Construction Land in Shanghai", approving the sale of the use-right of a plot in Songjiang District for rental housing construction, which symbolized the historic leap towards the development of rental housing on rural collective construction land.

Against this background, it is of great significance to discuss whether it's possible to, and how to use rural collective construction land reasonably to resolve the contradiction between the supply and demand of rental houses in the context of suburban industrial development, guide the orderly construction of village houses, and prevent villages from becoming informal settlements. It is also the core content this paper examines.

³ In-situ industrialized area means a rural area transforms to an industrial area with the local villagers employed either in factories or in related service industries. It was a typical phenomenon in China in the 1980s and 1990s and thought to account for the rapid industrialization or even urbanization in villages and small towns.

3 VALUABLE EXPERIENCE AND REFERENCES

The development and governance of rural settlements in the area with a high proportion of immigrants are always one of the focuses in Chinese urban and rural development. Some villages in urban margin areas took the initiative to take the housing of migrant employees in the city into account in planning, making the construction of rental houses in villages reasonable, legal, and institutionalized and gained some successful experiences. The development of informal rental houses in Dongguan and the development of public rental houses in Beijing's Haiqing Niaoluo Village are two examples that can be used for reference.

3.1 Institutionalization of Rural Informal Rental Houses in Dongguan: Mutual Benefits for the Government, Industry and Rental Housing Market

Dongguan is one of the pioneers in China for industrialization, urbanization, and the use of foreign capital to develop an export-oriented economy. It enjoys a rather relaxed policy environment given by the state. The rental housing in Dongguan villages started earlier and its development was more mature than other Chinese cities.

3.1.1 Origin of the housing problem in Dongguan: insufficient supply of the bottom-up housing institutions

Dongguan's housing problem is related to two characteristics of its external-labor-relied and export-oriented industrial model: a) An active utilization of migrant labor. With the increase of local workers' wages, factories gradually tend to use cheaper migrant labor in the later stage of industrial development. b) The local government withdrew from the industrial capital raising process and concentrate more on the land development, property management, and infrastructure support, and the local rural residents withdrew from the labor market, both consciously or unconsciously, in the competition with the migrant workers and switched engaging themselves to house renting business.

The influx of migrant workers brought housing pressure: From 1986 to 2007, the migrant labor force in the industrial sector increased from 87,000 to 4.481 million, a 50-fold increase; In the commercial sector, it has increased by 183 times. The 1990 Provisional Measures for the Administration of Foreign-Invested and Operated Lands legally established the right to build dormitories for foreign-owned enterprises. However, collective dormitories also have their limitations: a) Cannot cover a large number of highly mobile and scattered immigrants engaged in business services. b) Unable to solve the housing problem after the employees start a family. c) The scale of the needed workers in some factories often changes significantly, while the size of the dormitories is difficult to increase or decrease accordingly.

The housing problem also lies in the insufficient supply of institutions: The existing domestic land- and housing- supply system cannot cope with the rapid bottom-up development of industrialization; The housing problem in Dongguan requires informal houses and, moreover, a corresponding supply mechanism.

3.1.2 Rise of informal rental houses in the villages and small towns: the mutually beneficial symbiosis between factories and villagers

Driven by the realistic needs and economic benefits, the migrant workers in the suburbs seek to meet their housing needs in the informal rental housing market in villages and towns. And because the village collective⁴ can obtain additional compensation from the higher government by integrating small rural collective land, the villagers' behavior of building houses for rent also received acquiescence. This opened a cycle of benefits: low rents of rural houses reduced the cost of living for immigrants and thus the cost of labor for factories, strengthened, therefore, the willingness of external capital to join in, and positively fed back the collective economy of the village, which is dominated by operating industrial real estate. And once again, more immigrants would be attracted to flow in, and the supply of informal rental houses would further expand.

The supply of informal rental houses in villages and small towns has increasingly taken a proactive role in responding to the residential needs, from the site selection and the land-use planning to the design of

⁴ The village collective, also called as rural collective economic organization, consists of all the villagers in the same village. It is the only organization that is allowed to own the property of rural land. Its functions and responsibilities are similar to a local government, but their nature are different.

buildings and living units types. However, there also emerged chaos, such as the complex housing sources, the layout that exploits every tiny space, coarse designs, and uneven qualities of living facilities. Therefore, standardized management and supply mechanisms need to be established.

3.1.3 Institutionalization of informal rental houses in villages: Introduction of management regulations and indirect recognition of property rights

In 2004, the Dongguan government terminated the traditional practice that allows the rural resident to build self-occupied houses and promoted collective apartments for rural residents to support the expanding urban construction via a more intensive use of rural construction land. Under the dual pressure of gradual "local labor shortage" and "land shortage", the extensive growth of informal rental houses in the village can not sustain. Village rental housing needs to optimize quality and achieve institutionalization and standardized management before it can continue to develop.

In December 2003, Dongguan promulgated the "Interim Provisions on the Management of Rental Housing and the Personnel in Dongguan", which identified the management agencies for village rental housing, their functions, the content of the lease management, and the responsibilities of the lessor and the lessee. Since then, the departments of housing management, family planning, and fire protection have also formulated detailed rules to implement this lease management. Disputes over the legality of property rights have been shelved in management practice, which has promoted the standardization of the village rental housing supply.

Dongguan referred to the Housing Rental Licence System for the management of villages' informal rental houses, and the collection of house lease tax symbolized the recognition of the property rights of informal rental houses. In particular, the implementation rules stipulate that "if there is no land-use licence or legal certificate of the real estate's property rights, but there is no dispute about the ownership of the real estate, a provisional valid certificate of property rights can be issued by the local village committee, and after the property rights are legalized in the future, the house-leasing licence can be re-registered and issued." Recognizing property rights and levying rental taxes can help achieve a win-win situation between local governments and the rental housing market.

3.1.4 Marketization of informal rental houses in the villages and small towns: further division of labor in development and management

After the rental housing system in the villages and small towns was established, the market further improved the quality of rental houses from the supply side and gradually formed a stable housing supply.

One of the manifestations is the deepening of the division of labor in the housing development. In terms of the way of selling the use-right of construction land, the villagers in the same village would usually compete for internal bids. The relationship between the village collective and its members (villagers) is closer to the relationship between the government and the developers: the village collective is responsible for the planning and operation of the land, the construction of supporting facilities, while the villagers are responsible for the development, construction, and management of the rental houses; the village collective is mainly involved in the field of large industrial, commercial, and formal residential real estate, while the villagers in the field of small-scale rental real estate.

Another manifestation is the deepening of the division of labor in the leasing operation, that is, the emergence of the professional "sublessor", who is responsible for the security, fire protection, cleaning and other duties of the contracted houses, and cooperates with managers from the government to register or write off the leased personnel, which improves the efficiency of the lease work and marks the improvement of the degree of professionalism in the industry.

At this point, a complete villages' housing supply system has been formed: the village collective undertakes the land-planning, infrastructure construction and land transfer for rental housing; the villagers carry out the design, construction and contracting of the rental housing; the sublessor is responsible for the operation of the rental housing, and the local government is responsible for the standardization and management of rental housing.

3.2 Constructing Formal Public Rental Housing on Collective Construction Land in Haiqing Niaoluo Village, Changping District, Beijing

3.2.1 Background: housing demand brought by the establishment of the industrial zone

The reasons for developing public rental housing in Beijing's Haiqing Niaoluo Village are related to the long-term idleness of collective construction land in the village, the large demand for rental housing brought by the establishment of the Zhongguancun industrial zone in the surrounding, and the urgent requirement of villagers to obtain long-term and stable income.

1) The collective construction land was left idle for a long time. In addition to arable land and homesteads, in 2010, there were still available collective construction land of about 133 ha in the village. Most of them were not well managed and had only low economic benefits. By contrast, the village possesses a strategical location in the core area for the R&D and high-tech industries in the north of Zhongguancun, a famous national industrial zone. The village's surrounding area was developing rapidly.

2) Large-scale demand for rental housing was formed in the surrounding area. The town where the village belongs to had about 50,000 indigenous residents, while the migrant population had reached 270,000. After 2010, the first batch of 15 central enterprise projects settled in the Future Science and Technology City and started their construction, attracting at least 20,000 more researchers and related personnel to move in, creating further demand for high-quality rental housing in the region.

3) Villagers' requirements for long-term and stable income sources. After two large-scale land-acquisitions in the village conducted by the higher government, a large number of landless farmers were generated. Although the villagers got one-time compensation for the land acquisition, however, if there is no good investment channel and guidance, the money is likely to be squandered.

3.2.2 Development mode of the public rental housing: villagers held shares and dividends

In 2010, the Villagers' Congress decided to use collective construction land to develop public rental housing. After the public rental houses were completed, it became a collective asset of the whole village, which is only used for rental and not for sale. Part of the funds for the real estate development was raised from the villagers' investment, and the other part came from the compensation of the land acquisition and the accumulated assets of the village collective. Most of the income of public rental housing is distributed to villagers every year in the form of share dividends.

3.2.3 Benefits of the public rental housing development: a win-win for the villagers, village collective and industrial zone

After the completion of the public rental housing project in Hailuo Niaoluo Village, the villagers, village collective and industrial zone will benefit from:

1) Villagers have stable jobs, industries, and income sources. The daily operation of public rental housing projects requires personnel for property management, such as managers, accountants, and marketing persons. The maintenance of the community infrastructure also requires decorators, gardeners, and cleaners, which meets the needs of the employment of villagers of different ages and educational levels. At the same time, as a large number of young technical staff moved in, the development of the village's laundry, catering, Internet and other service industries has also been promoted. Also, because the shares of public rental houses allocated to the villagers can be inherited, transferred, and gifted, even if the villagers move outside the village and become urban registered residents, they can be free from the worry of losing their assets.

2) The village collective's income from the land and property has increased significantly. Compared with the former compensation for the land-acquisition, the village collective's income from developing public rental housing has increased by 73.6 times; the investment of public rental houses is expected to recover the cost in 16 years. Correspondingly, the per capita income of villagers has also increased rapidly, and the annual per capita income has increased by 22,000 yuan (2900 Euro).

3) Broadened the housing-supply-channels and eased the pressure of housing in the industrial zone. Within the first two or three years of the completion of the Zhongguancun industrial zone, there were only 8,000 public rental houses planned to be put into use in Changping District, with a large gap between the supply and demand. However, after the completion of the second-phase public rental houses in Haiqing Niaoluo

Village, about 4,000 public rental houses will be added, alleviating the pressure of houses for young technicians.

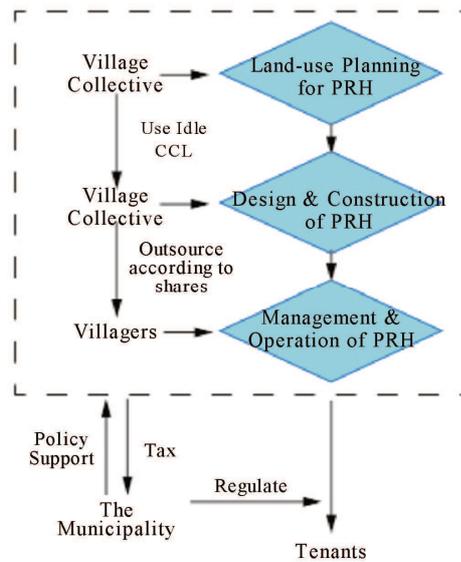


Fig. 2: Supply Mechanism of Public Rental Housing in Haiqing Niaoluo Village (Source:Author)

4 DISCUSSION ON THE STRATEGY OF DEVELOPING PUBLIC RENTAL HOUSING IN CAO'AN VILLAGE, JIADING INDUSTRIAL ZONE, SHANGHAI

Cao'an Village is located north of Loutang Old Town, Jiading Industrial Zone, Shanghai, and close to the northern core of Jiading Industrial Zone. By 2015, the permanent registered population of Cao'an Village (namely villagers) was 950, and the number of permanent residents (including immigrants that stay in the village for more than six months) was 2,230. In addition, more than 1,200 registered villagers moved out of the village and settled in Jiading City and Shanghai Central City. Among all the residents, the immigrant residents are mainly employed in the nearby industrial enterprises, while the remained indigenous villagers are mainly elderly people. By 2015, most of the existing houses in Cao'an Village were self-built by the villagers, with relatively scattered distribution and no centralized planned and constructed settlements.

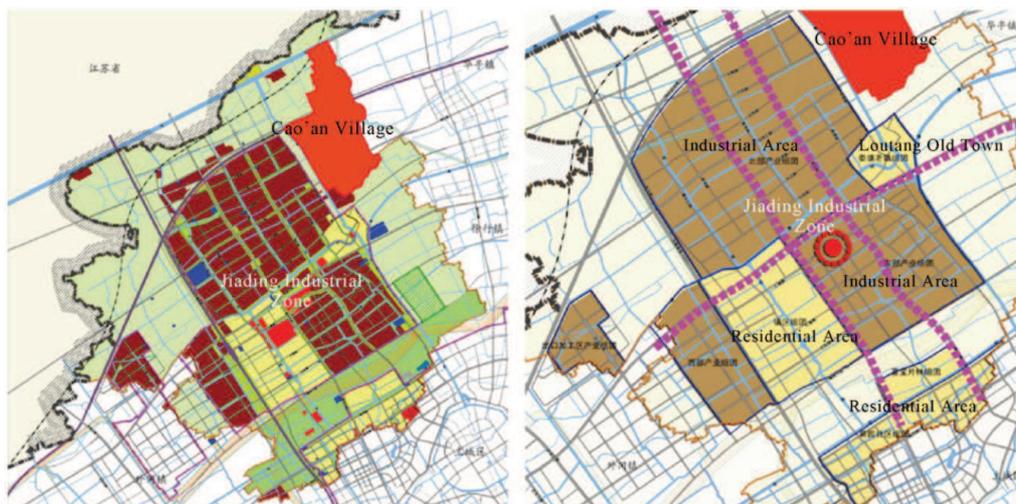


Fig. 3: Location of Cao'an Village (Source:the Government of Jiading District)

4.1 Problems and Difficulties in the Development of Cao'an Village

From July to August 2015, the author participated in a symposium with 6 main enterprises in Jiading District, and inquired the development status and needs of the enterprises; through field researches, the symposium with the village collective, interviews with villagers and questionnaire surveys, the author investigated the development status of Cao'an Village. The research found several problems and difficulties in the development of Cao'an Village, including:

1) Villagers' income is low; the employment is difficult, and the village is "aging". The villagers' main fixed income comes from the land-use transfer fee from the enterprises settled in the village of about 1,300 yuan (about 170 Euro) per month and the annual land-rent-dividends from the factories settled in the village. The source is relatively single and the income level is low. To obtain a higher level of income, many middle-aged and young people in the village choose to work outside the village, and the problems of "hollowing out" of local rural families and "aging" of rural society are serious. For the left-behind elder villagers, the lack of industries and a stable source of income is a major problem; while for the villagers working outside, although they have generally expressed a strong willingness to return to their hometown, it is still a big obstacle that there are no suitable jobs.

2) The village has a backward infrastructure condition. The specific problems are as follows: the only road in the village is less than six meters wide, the cement pavement is poorly maintained, and the traffic capacity is limited; the density of the road network in the village is low, and in the east-west direction, the village lacks roads connecting with the outside; there is no public transportation in the village, which is inconvenient for traveling; there are no street lights installed in the village, and there are certain hidden safety hazards when traveling at night; villagers' houses are aging and need repair; public service facilities in the village such as elderly-care-centers and places for sports are insufficient. The village needs to consider how to promote the construction of infrastructure and public service facilities, and, hereto, the introduction of market mechanisms should be given special attention.

3) The industrial structure needs to be adjusted and upgraded urgently. By 2014, manufacturing was the most dependent industry in Cao'an Village: In 2014, the village collective's income was 4.1 million yuan (about 0.54 million Euro), including 1.05 million yuan (about 0.14 million Euro) for industrial land-rent and 1.1 million yuan (about 0.15 million Euro) for plant-building-rent, which together accounted for 52.4% of the village collective's total income. However, the manufacturing factories established in the village are generally small in scale and low in production-efficiency, and their negative effects such as environmental pollution exceed their economic benefits. The relocation of factories is inevitable in the future for more efficient development. After the manufacturing industry moved out, what kind of resources and industries the village can rely on for sustainable development is a question worth pondering.

4.2 Necessity and Feasibility of Developing Public Rental Housing on Collective Construction Land of Cao'an Village

4.2.1 Necessity at the regional level: introduction of technical talents vs. the shortage of public rental housing

According to the urban plan, after the completion of the Jiading Industrial Zone, a large number of technical personnel engaged in advanced manufacturing industries will settle in, and a considerable part of them will be introduced in the technical, R&D, and management departments for the needs of industrial upgrading. However, the current projected population size of the Jiading Industrial Zone is far more than what the regional available houses can support: According to related plans, the three residential areas planned by the Jiading Industrial Zone can accommodate 99,000 residents; By contrast, after the completion of the two major industrial areas, the population size in the industrial zone is expected to reach 136,000, and there is a certain gap in the housing supply.

For the introduction of technical talents in the region, the development of public rental housing is a good strategy. The reason is that on the one hand, young technical talents often lack the accumulation of asset and thus it is difficult to realize the purchase of commercial houses in the short term; on the other hand, in the survey of enterprises in the Jiading Industrial Zone in 2015, it was found that the salaries of young technicians and managers are often not low. After working for several years, the annual salary of many university graduates can reach 120,000 yuan (about 15.7 thousand Euro). According to the relevant policies of affordable housing, it exceeds the maximum-wage-threshold for purchasing affordable housing, and it is therefore unlikely for the young technicians to apply for affordable housing guaranteed by the state.

However, public rental housing resources are still insufficient in the industrial zone. Although in recent years, the New City Center area of the industrial zone has concentrated on building multi-story apartments, they are mainly low-cost affordable housing for purchase not for rent. The old town of Loutang, which is adjacent to the northern industrial zone and Cao'an Village, is a historic protected area. In terms of the

available land and the difficulty of development, it is also difficult to realize the intensive construction of public rental housing in the old town in the future, so the residential needs cannot be met in the old town as well.

Also, the old town of Loutang, which is close to Cao'an Village, is facing the pressure of immigrants. Compared with the newly developed New City Center area in the Jiading District, the old town of Loutang has a dense and convenient road network, prosperous commerce along the street, and relatively sound living supporting facilities after a long period of development. It is well connected with several main roads in the northern industrial zone. With convenient transportation, it is regarded as one of the first choices of residence for many new employees in the enterprise. If this pressure on housing demand cannot be released on time, driven by the economic interests, it may be possible that the residents renovate and expand the existing dwellings for lease in the Loutang old town and surrounding villages (including Cao'an Village). Building low-quality, disorderly houses is not conducive to the construction of a safe and good living environment, but instead would bring a burden of management and may breed a series of social problems. Cao'an Village will be the first to bear the brunt because of its location, so it is reasonable to proactively prevent such a situation through appropriate rural planning.

4.2.2 Feasibility of developing public rental housing on the village level

Cao'an Village has the conditions and feasibility to develop public rental houses and low-rent houses. In terms of the location, Cao'an Village is very close to the high-tech industrial area to the north, where the main migrant groups are young technicians and have a large demand for rental houses in the future. Besides, Cao'an Village is also closely connected with Loutang old town and thus has good accessibility to the relatively sound social and cultural infrastructures.

Besides, Cao'an Village has a total of 162 hectares of collective construction land, of which 80.8 hectares are homesteads, 13.4 hectares are industrial land, 0.1 hectares are public service facilities land, with about 68 hectares left for further development and utilization.

In terms of villagers' willingness, interviews and questionnaire survey results show that villagers generally want to build a "New Countryside" and look forward to the long-term, stable employment; some villagers have expressed the hope that the settling of the youth would improve the current situation of aging and increase the vitality of the village. Besides, the "Pilot Plan for the Construction of Rental Houses Using Collective Construction Land" released in 2017 and the "Announcement on the Transfer of Use-Rights of Village-Collective-Operated Construction Land in Shanghai" issued in 2018 offered also strong policy support for the construction of public rental housing in Cao'an Village.

Experience of domestic cases indicates that after the completion of public rental houses, the rural collective, villagers and Jiading Industrial Zone would achieve a win-win situation: a) The income of the village collective and villagers will increase by times. For example, in Beijing's Haiqing Niaoluo Village, compared with the former compensation for land acquisition, the income of the collective land-use has increased by 73.6 times, and the per capita annual income has increased by 22,000 yuan. b) Villagers can achieve the goal of having jobs, establishing industries, and accumulating capital by providing services such as property management, laundry, and catering to the community. c) Villagers working outside the village can find suitable local jobs now and return to their hometowns for employment. These benefits, which are in line with the expectations of the villagers, will greatly promote the villagers' initiative to construct and manage public rental housing.

4.3 Strategies for Developing Public Rental Housing in Cao'an Village

At present, there are two main approaches to develop public rental housing on collective construction land: a) The zone of public rental houses can be designated either specially or together with the construction of houses for the resettlement after the land acquisition, and the villagers can either apply to manage the public rental houses according to their family-conditions or rent out their idle houses of resettlement on their initiative. b) Public rental houses can also be constructed on the idle collective construction land or the site of the vacated industrial land. Since the remaining amount of collective construction land in the Cao'an village is still sufficient, it is more suitable to adopt the second approach.

Cao'an Village can learn from the experience of Haiqing Niaoluo Village, Changping District, Beijing. For one thing, the village collective can lease the houses for the resettlement from the villagers in the long term and integrate these properties in the official public rental housing system, which could be used exclusively for the provisional and transitional residence (normally 3-5 years) of employees of key enterprises in Jiading Industrial Zone. Besides, villagers can also be allowed to rent their idle resettlement houses for their own accord. At the same time, the village collective can set up companies for the real estate development and property management to deliver daily services in the communities, and create different posts such as security, cleaning, and housing agencies, meeting the needs of the employment of the villagers and increase their economic income.

In terms of spatial layout, the experience of the informal rental housing in Dongguan villages shows that rental houses are usually attached to other functional blocks, including industrial areas, residential areas in the newly developed districts, markets, and commercial areas. Most of these rental houses are arranged along roads, thus attracting tenants with good accessibility. As far as Cao'an Village is concerned, the south of the village is connected to the Loutang old town by Zhaojing Road (6 meters)-Jiatang Road (12 meters), which is rather tortuous and distant; while the west of the village is directly adjacent to the northern industrial area, and the Loulu Highway (20 meters), which is parallel to the village boundary, leads directly to the Loutang old town and the deep part of the northern industrial area. Therefore, more consideration should be given to strengthening the transportation links between the public rental housing communities and the Loulu Highway in the west. In terms of specific measures, it is planned to extend the existing east-west Xingqing Road in the northern industrial area and Zhao'an Road to connect with the village's core area of public services directly. The planned rental housing blocks will be centered on the core area of public services in Cao'an Village and will be arranged along the Xingqing Road and Zhaojing Road to obtain good traffic accessibility to the northern industrial area. Besides, commerce and daily services will be established on the ground floor of the buildings to form continuous commercial streets that stretch from the Loutang old town. On the micro-level, various apartment-types with different living standards can be provided based on the needs of different groups of people, such as single, double and triple rooms for single tenants, and standard apartments for families.

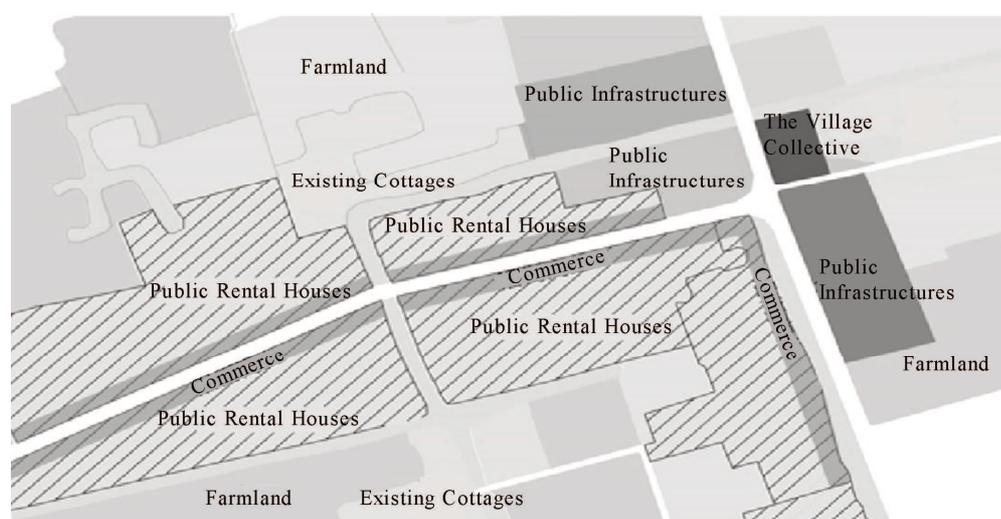


Fig. 4: Spatial Layout of Public Rental Housing Development in Cao'an Village (Source: Author)

5 CONCLUSION

Since the 1990s, it is a feature of suburbs in Shanghai that the urbanization lags behind the industrialization. A large number of new domestic immigrants in the suburbs occupy only a few urban public resources, and the shortage of housing for migrant workers is particularly prominent. If the housing demands in the industrial district in suburbs are not met for a long time, the indigenous villagers would likely construct or enlarge the owner-occupied houses illegally arbitrarily and rent them to the immigrants, resulting in the deterioration of the living environment and social conflicts in the village.

With the national policy support, villages in Dongguan and Beijing adopted the strategy of developing rural rental housing, which combined the processes of both "top-down" and "bottom-up" and realized the mutual

benefits and win-win result among the village collective, villagers and the industrial enterprises. The key to its success lies in the cooperation of the village collective, villagers and local governments with the policies' support, which facilitated the normalization and marketization of the informal rural rental houses, formed a series of complete supplying mechanism, guaranteed the sustainable development and the enhancement of the living environment of the rural community.

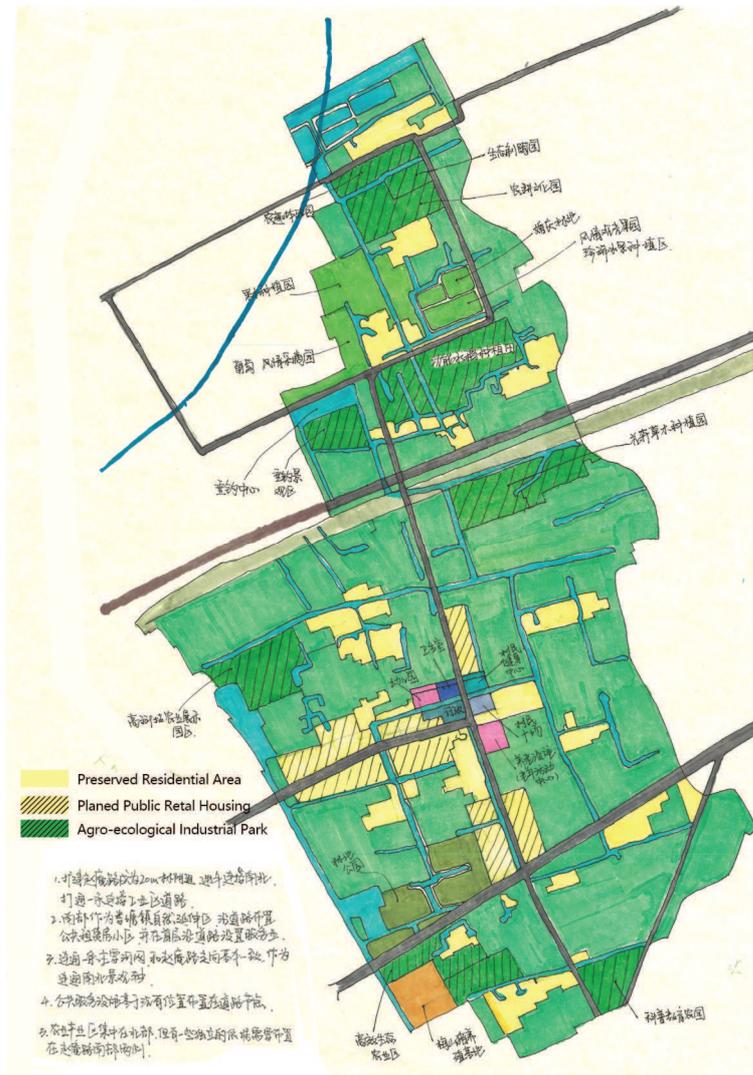


Fig. 5: Proposal of Development Plan of Cao'an Village (Source: Author)

Cao'an village in the Jiading Industrial Zone in Shanghai, by contrast, is facing the developing dilemma of the villagers' low income and low employment rate, the poor basic infrastructure, and the urgent needs to optimize the industrial structure. However, the village also has the potential and opportunity to utilize the collective construction land to develop public housing: From the regional level, with the introduction of technicians in the industrial district, the regional demand of public rental houses will increase substantially, and it is, therefore, necessary for Cao'an village to develop it; From the village level, there is still stock of collective construction land available in Cao'an village currently, and the villagers generally expressed their expectation for a long-term, stable employing condition. There is, therefore, endogenous dynamics and the feasibility for the village to develop public rental houses.

Based on the references and analysis, this paper suggests strategies for the development of Cao'an village. First, the government could rent the houses for the resettlement from the villagers collectively and integrate them into the public housing system. Second, villagers should also be allowed to rent their unused houses for the resettlement independently, so that a resilient housing supplying system can be established. Besides, the village collective can set up property-managing companies to offer high-quality daily services to the tenants, as well as to create stable, long-term jobs for the villagers, achieving, in the end, the win-win results among the regional industries, the village collective, and the villagers.

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