

RESEARCH ON THE POSSIBILITY OF URBAN AGRICULTURE IN CHONGQING, CHINA

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Abstract—This paper aims to discussion the possible of UA planning in Chongqing city from the advantage and problems in Chongqing city. Urbanization has brought dramatic changes in the urban environment in China in recent years. At the same times, there are also many problems in the growth of urban population in China, especially in Chongqing city. With the aim of solving these problems, mainly concentrated in Chongqing host city, urban agriculture planning should be the most suitable and better way to develop sustainable city. However, to develop urban agriculture in a landscape or planning perspective, has been little studied and remains poorly understood in Chongqing. *(Abstract)*

Keywords—urban agriculture; sustainable; Chongqing; landscape architecture

I. INTRODUCTION

A landscape is the expression of the interaction between the natural environment and man's activities to make the environment more suitable for his life and needs [1]. Within urban areas, landscape are highly affected and even dominated by human activities. The outward forms of those city landscapes have significant connections with their economic, social or cultural functions [2].

Scientists always discover many possibilities. Also, discovering possibilities is a common an usually way for a great designer. With the repaid development of urbanization in china, people tend to care more about the quality of life, especially in the aspect of environmental problems and food security. Chongqing, a large city in southwest china, is facing these problems now. Then, how to solve these problems? According to chongqing's situation, urban agriculture may be the best way to solve problems above.

During the 20th century, the world's population has increasingly become concentrated in urban areas [3]. The growth and expansion of metropolitan regions where agricultural and non-agricultural activities are spatially integrated makes the distinction between rural and urban land uses problematic [4]. Peri-urban areas, which often include valuable protected biotopes, forested hills, preserved woodlands, prime agricultural lands and important wetlands, often provide essential ecosystem services for urban residents[5].but while complex, both urban and peri-urban communities depend on the many agro-ecosystem services provided by agricultural land[6].

II. BACKGROUND

A. What is Urban Agriculture

Urban agriculture is the practice of cultivating, processing, and distributing food in or around a village, town, or city[7]. Urban agriculture can also involve animal husbandry, aquaculture, agroforestry, urban beekeeping, and

horticulture. These activities occur in pre-urban areas as well. Urban agriculture can reflect varying levels of economic and social development[8]. In the global north it often takes the form of a social movement for sustainable communities, where organic growers, foodies, and locavores from social networks founded on a shared ethos of nature and community holism[9]. These networks can evolve when receiving formal institutional support, becoming integrated into local town planning as a transition town movement for sustainable urban development. In the developing south, food security, nutrition, and income generation are key motivations for the practice. In either case, more direct access to fresh vegetables, fruits, and meat products through urban agriculture can improve food security.

B. City of Chongqing

Chongqing city is known as a mountain city where is featured by mountain and hills, with large sloping areas at different heights. The central urban area is built on mountain and partially surrounded by Yangtze river and Jialing rives. The city's population is about 32.8million of people in 2013. Chongqing has a monsoon-influenced humid subtropical climate, and for most of the year experiences very humid conditions [10].

For thousands of years, citizens in this city have long history to plant vegetables and fruits trees in backyard garden. Chongqing covers a large area crisscrossed by rivers and mountains. The whole area slops down from north and south towards the Yangtzer river valley, with sharp rises and falls. The area is featured by mountain and hills, with large sloping areas at different heights.

According to a July 2010 article from the official Xinhua news agency, the municipality has a population of 32.8 millions, including 23.3 millions farmers. Among them, 8.4 million farmers have become migrant workers, including3.9 millions of them working and living in urban areas of Chongqing.

This would mean that the locally registered farmers who work in other jurisdictions number 4.5 millions, reducing the local, year-round population of Chongqing in 2010 to 28.3 million, plus those who are registered in other jurisdictions but live and work in Chongqing. According to China's 2005 statistical yearbook, those, of a total population of 30.55 million, with residence registered in other jurisdictions but residing in the Chongqing enumeration area numbered 1.4 million, including46,000 who resided in Chongqing "for less than half year". An additional 83,000 had registered in Chongqing, but not yet settled there.

C. The Problems

Development of urban agriculture has started in China about the early 1990s, such as the cities, Shanghai, Shenzhen, Beijing and other places. However, the construction of Chongqing urban agriculture development has just started. There are some reasons why the city should use this way to develop. According to the annual report by the end of 2013, the rural population in the region at the end of 1204.0 million, accounting for 49.8% share of the city; commonly cultivated area of approximately 1,042.9 acres, about half of the city; fishery achieved 6.13 billion USD, accounting for 57.6% of the proportion of the city. In other words, this largest city has the large rural urban dual structure. Actually, the agriculture's base is weak. There is no real sense of modern agriculture because of slowly development of agricultural technology. Thus, the farmer's income is low. The relationship between urban to rural is not closely enough. The urban's radiation effects on the agriculture industry driven is not strong.

What's important, with the development of industry in urban, the environment problems has become more severe, such as air pollution, the erosion of soil, un-activity open space, et al.

III. CASE STUDY

A. Program Analysis

In the context of the rapid development of urbanization in China, the huge rural population is transformed into urban population. Most of the new urban residents with rural backgrounds still have strong feelings and nostalgia for land farming. Moreover, the overall quality of this group has many difficulties in transitional urban life, such as low academic qualifications and poor technology. Therefore, the integration of their communication and urban life has become a social issue. This plan is to explore the possibility of solving the problem by means of urban productive landscape. And this provides the possibility for the development of other cities.



Fig. 1. Site in Chongqing.

As a representative city of China's urbanization process, Chongqing has its typical significance. The detailed description is shown in Fig.1. The surge in urban population, especially the transformation of the agricultural population into urban population. The advantages of their natural agricultural tradition provide an important support for the development of urban agriculture. In addition, it is the characteristic of the mountain city of Chongqing, and there are more scattered pieces of land. These lands can be fully utilized. Once again, it is possible to increase the cultural

activities of urban space and increase the communication between people.



Fig. 2. Urban Agriculture in Chongqing.

This project explores the possibility of Chongqing's urban agriculture from the perspective of landscape planning and design in the context of rapid urbanization. The detailed description is shown in Fig.2. At present, there are many developments in the research of urban agriculture in China, but from the perspective of landscape, there is less research on the development of urban agriculture in Chongqing. This project attempts to explore the possibility of Chongqing's urban agriculture development from the perspective of landscape. Its design method is mainly the way of urban productive landscape combined with artistic expression. The detailed description is shown in Fig.3.



Fig. 3. Urban agriculture in Chongqing.

B. Design Strategy

This project explores the possibility of Chongqing's urban agriculture from the perspective of landscape planning and design in the context of rapid urbanization. At present, there are many developments in the research of urban agriculture in China, but from the perspective of landscape, there is less research on the development of urban agriculture in Chongqing. This project attempts to explore the possibility of Chongqing's urban agriculture development from the perspective of landscape. Its design method is mainly the way of urban productive landscape combined with artistic expression. The design method is to use the characteristics of the mountain city of Chongqing to propose a landscape city, and finally to use the red, yellow and blue art works of Mondrian to reconstruct the spatial form of the art farm. The detailed description is shown in Fig.4.



Fig. 4. Urban agriculture in Chongqing.

past success and failure. Urban agriculture can be something to help city more sustainable and healthy development when we well learn from both successful cases and unsuccessful cases. Especially in Chongqing, citizens has long history to plant vegetables and fruits trees in backyard garden. Thus, urban agriculture would have a brightly future in Chongqing.

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