



Mapping the Urban Farming in Chinese Cities:

Depicting a social phenomenon via on-line news

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**Abstract:**

The project tends to spatially depict a social phenomenon during the rapid urban construction period of China started in the late 1980s. Cities in China mostly occupy the agricultural land and turn the peasants to urban citizens overnight. However, most farmers especially the older generations who had been working and living on the rural land hardly accept the urban life instantly. The news about old people planting vegetables in the public green spaces of city are common. The project tries to reveal the time-spatial dynamics of urban farming by older people associated with the urban construction, aging population and farmland occupation.

The project will not only rely on traditional source of data such as official statistical data, open source map and satellite image etc., but utilize the pc-Internet news to extract and construct an original data set. By combining the statistic and news reports, a heat map describes the happening of farming in urban land at a national scale co-related with the aging population and urban construction from 1990 to 2010. The approach of data extracting in the project will inspire to use the online resources by largely relying on the search engine. It also encourage to rethink how researchers can gain data in the country where most critical data are kept away from public.

Map Link:

https://www.dropbox.com/s/2h0guoay7fq0wtz/Mapping%20the%20Urban%20Land%20Farming%20in%20China_longfeng%20WU.pdf?dl=0



Context: Why Farming on Urban land

China is one of the most historical agricultural country and now she is running fast on the road toward urbanization. Hundreds of cities have been built and thousands have expanded. Most of them choose to occupy the agricultural land due to its easy access and better geographical condition. Naturally, the villagers who have been farming one the land from generation to generation were suddenly become urban citizens facing an entire new life-style they had never encountered before. Plus, the public's concern about food security, the lacking social activities of aged populations most of whom used to be farmers, and lack of proper management of public green spaces in some residential communities all contribute to the common phenomenon of urban land farming.

The project focuses on such a characteristic social phenomena-aging people's farming on the urban land, in China along with the largest scale of urbanization in the history. It tries to depict the national scale activities by a integrated heat map whose data derives from both traditional sources and recent on-line posts.

Data: Consumption and Construction

Farming the public green spaces in China's city has been a common phenomena in recent years. Numerous reports and sayings can be heard from Internet and people around us. But, how can we perceive such issues whose geological data can rarely be found. The proposal relies on various open-source data and media to map the phenomenon in the context of rapid urban construction. Traditionally, researchers rely on satellite maps, government statistic data, and open source maps to draw the urbanization footprints in China. This project is powered by the large PC-internet source that grows tremendously in the past two decades in China.



The project innovatively relies on the public news posted internet newspaper. In 2000 when the Chinese version of "Google"-*Baidu* was established, the PC-internet news is become part of people's life and one of the major source to know what is going on until the mobile internet started dominate recently. In the project, the news depicting the farming activities in urban green space such as public green space in gated residential communities (Xiaoqu in Chinese characters) are extracted from 2000 to 2010 and geo-referenced. The key words are "gated residential community (小区 Xiaoqu in Chinese characters)" and "Farming (种地 Zhongdi in Chinese characters)", 241 news were found from 2000 to 2010. Specifically, the comments and the involvement of aging people in the issues are recorded respectively and represented on the map.¹ The outcome reveals integrated a heat map describing the frequency of urban farming activities associated with the old people who participated from 2000 to 2010.

On the other, previous studies on the population density by official statistics and urban construction by research initiatives are retraced to form a time-spatial dynamics of the aging and urbanization in China. The aging population is calculated from the official publication- "*Historical China County Population Census Data with GIS Maps(1953-2000)*" and the changes of urban footprint data referred the scholar paper- "*China's urban expansion from 1990 to 2010 determined with satellite remote sensing*" by Wang.² The previous research data serves as a context map to convey the trajectory of urbanization, aging and farmland degrade from 1990 to 2010.

Perspectives

¹ The on-line news data was extracted manually and geo-referenced based on the geological location of google map and baidu map.

² The heat map manually geo-referenced found data in Arcgis 10.1, but minor deviation is expectable since the author has no access to original GIS data.



The ultimate goal of the project is on one hand to document the undocumented common phenomenon at a national level to inform the public of on-going urbanization in China. Moreover, it is an experimental attempt to use the on-line fragmented resources based on the research engine to build an original data source that could be open to the public. It could also be a possible approach to explore the more popular data source recently-the use of mobile Internet.

The project is a phase report of the author's independent research project that looks into the broad question of intervention between China's urbanization and agricultural landscapes based on big data consumption and construction. It was advised by Professor Peter G Rowe who encouraged me to discover the urban farming issues. The next phase of the project will focus on how to extract user-end data by the mobile internet. A more efficient means will be invented to gather fragmented data and open to public.

Reference

- 1, news.baidu.com
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- 3, Historical China County Population Census Data with GIS Maps
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- 5, <http://worldmap.harvard.edu/chinamap>
- 6, map.baidu.com
- 7, Google Map.