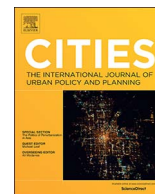




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## City profile

## Lhasa: Urbanising China in the frontier regions

Tingting Chen<sup>a,b</sup>, Wei Lang<sup>a,b,\*</sup>, Edwin Chan<sup>c</sup>, Conrad H. Philipp<sup>d</sup><sup>a</sup> Department of Urban and Regional Planning, Sun Yat-sen University, Guangzhou 510275, China<sup>b</sup> Urbanization Institute, Sun Yat-sen University, Guangzhou 510275, China<sup>c</sup> Department of Building and Real Estate, Hong Kong Polytechnic University, 00852, Hong Kong, China<sup>d</sup> Singapore-ETH Center, Eidgenössische Technische Hochschule Zürich, Singapore 138602, Singapore

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## ABSTRACT

The city of Lhasa has experienced urban transformation in recent decades. Accordingly, this paper aims to discover and characterise the urbanisation process of Lhasa, which is the first large, high-altitude city in China to be urbanised. Until 1995, Lhasa mainly served as a regional capital in China with political and administrative functions. Since 2005, the rapid economic development of Lhasa has become a key driver of its urban expansion due to the presence of market mechanisms and the continuous inflow of visitors. After the opening of the Qinghai–Tibet Railway in 2006, the development of urban infrastructures in Lhasa has facilitated the development of the city as well as promoted the health and well-being of its citizens. However, these advancements were accompanied by changes in land use. The land use/cover change reveals the large floating population in Lhasa and underscores the role of high population growth in the economic prosperity of the former agricultural and pastoral areas in the city. The increased amount of air and water pollution, the reduction in the size of agriculture land and the changes in the environment intensify the contradictions between urbanisation and sustainability in a nature-sensitive region such as Lhasa. The paper also proposes some strategies, planning practices and implication on the land use and urban development in the frontier regions of West China cities.

## 1. Introduction

The modern urbanisation of China has been underway for more than three decades and has resulted in high economic growth rates, thereby attracting global attention and motivating intensive research on this topic in the recent decades. The differences among west, central and east China in terms of their geographical locations, available resources, economic and social development status and cultural backgrounds have been identified as pressing issues that hamper the long-term sustainable urbanisation of China. Given these regional disparities, many studies have also investigated the urban–rural disparities in the country. For instance, rural areas have mostly focused on agricultural production at the early stage of China's 'reform and opening up' (Dayal-Gulati & Husain, 2000; Hu & Wang, 1996). However, the regional disparities in China have been continuously growing since the 1990s (Wang & Fan, 2005; Kanbur & Zhang, 2005) due to the increasingly imbalanced economic development and accessibility of coastal and hinterland areas (including provinces and autonomous regions).

Tibet has been named the 'roof of world'. However, given its limited access to the outside, it has suffered from the imbalance described above. The western frontier regions in China, including the

underdeveloped areas of Sichuan, Gansu, Guizhou, Yunnan, Qinghai, Chongqing, Sinkiang and Tibet, still exhibit some disparities in the post-cold war era, although in the 2000s, the degree of such disparities decreased to a certain extent (Xu & Li, 2006). China started the new millennium with its decision to initiate the strategic development of its western regions, particularly Sinkiang and Tibet. The implementation of the Go West Strategy, which is officially known as the China Western Development Program, has increased the economic growth rate of these western regions by about 1.5% per year since 2000 (Li, Wang, & Xu, 2016). Through this ambitious plan, China aims to address the regional inequity and uneven development its western by 'opening the west'. In March 2014, the State Council of China released the National New-Type Urbanisation Plan, a central government policy that serves as a guideline for urbanisation and for balancing the development of eastern and western regions. Therefore, the urban development of underdeveloped regions in China has underlying strategic motives.

Examining the only big city in Tibet can expand the current insights relating to land use in the region and make these insights suitable for appraising the overall development capacity of the frontier regions in China. If Tibet, as one of the frontier regions of China, is to be prioritised for urbanisation and economic development, then boosting the

\* Corresponding author at: Department of Urban and Regional Planning, Sun Yat-sen University, Guangzhou 510275, China.  
E-mail address: [langw3@mail.sysu.edu.cn](mailto:langw3@mail.sysu.edu.cn) (W. Lang).

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economic growth of Lhasa, its capital city, needs to be prioritised as well given its increasing population, increasing land use demand for housing and variety of economic activities and services (e.g., industrial, commercial, public and green space requirements). Following its transformation from a prefecture to a prefecture-level city in 1960, Lhasa has been a main administrative part of the Tibet Autonomous Region (TAR) of China (State Council of The People's Republic of China, 2016). However, few studies have examined such transformation because of several limitations, such as the distance of the frontier regions, geographical restrictions, political reasons or sensitive security issues (Li & Zheng, 2004; Yeh & Henderson, 2008; Zhang, Li, Fu, Xie, & Zheng, 2000).

The availability of publicly accessible data, the increasing global interest in the natural environment and the proactive efforts in limiting the adverse impacts of urbanisation highlight the need to examine the urbanisation process in Tibet. This paper aims to answer the following questions: 1) What characterises the historical socio-spatial transformation of Lhasa? 2) What are the factors that govern urbanisation and land use changes? 3) What are the roles of urban planning in Lhasa and in other analogous cities in the frontier regions of China when they are faced with difficulties related to urban transformation?

This paper first discusses the historical development of Lhasa before presenting the methodology and data. Second, this paper analyses the urban dynamics of Lhasa from the 1990s to the 2010s to highlight its urban development and socio-spatial transformation in the aspects of urban structure, land use, urban infrastructure and environment. Third, this paper investigates the relevant planning responses and strategies under China's New-Type Urbanisation and the One Belt One Road Initiative contexts. The final section of this work concludes the paper.

## 2. Historical development of Lhasa before the 1990s

### 2.1. Geographical features

As the largest city and the administrative capital of TAR, Lhasa is located in Southwest China (see Fig. 1), has approximately 530,300 registered residents as of the end of 2015 and has a GDP per capita of RMB 59,223 (Lhasa Bureau of Statistics, 2016). The primary elevations of Lhasa range between 4400 m to 5300 m above sea level, thereby making Lhasa one of the highest-altitude cities in the world. With a length of 315 km, the Kyi River (or Kyi Chu), a tributary of the Yarlung Zangbo River, runs south of Lhasa (Zhang & Lian, 2015). The Lahu Wetland Reserve is located northwest of Lhasa and is considered the largest and highest natural wetland in the world with an area of 12.2 km<sup>2</sup> (Liu et al., 2013).

The Lhasa valley has an average elevation of 3610 m; the average annual temperature is 8 °C and ranges from 16.0 °C (extreme 30.4 °C) in June to −1.6 °C (extreme −16.5 °C) in January. Lhasa has an annual precipitation of 500 mm that mostly falls between July and September. Located in the centre of the Tibetan Plateau and surrounded by mountains, Lhasa is protected from intense temperatures and strong winds and maintains a cool and semi-arid climate with frosty winters and mild summers (China Meteorological Administration, 2016), and receives approximately 3000 h of sunshine each year.

### 2.2. Culture

The religious culture of Lhasa, which is formerly depicted as a political–religious binuclear city, has played a significant role in the formation and foundation of its modernisation process and built environment. To some extent, the religious places and buildings in Lhasa serve the essential functions of the city, justify its compact urban form and act as exterior forces of urban expansion (Zhang, Liu, & Zhao, 2016). Given that cultural buildings, such as the Potala Palace, Jokhang Temple and Norbulingka Palace, are all located in the city, Lhasa also acts as the religious centre of Tibetan Buddhism since the mid-17th

century. These three major temples, which hold political and religious importance for Tibet, were built in the western, northern and eastern parts of Lhasa, respectively.

### 2.3. The contested history before 1951

Given that the spatial form of Lhasa did not show significant changes before 1951, the 30th Dalai Lama (1879–1933), in cooperation with the local government, launched several interventions to improve the urban function and public infrastructure of the city. These interventions include the construction of telegraph lines, power stations and the first modernised concrete building in China. The increasing population in the city resulted in the gradual formation of markets selling religious goods. These markets were placed under government control. Dozens of temporary or permanent living villagers with different ethnicities, occupations and identities also started building their homes near the Jokhang Temple. The distances between their residences and the temple greatly depended on their jobs and social statuses. Before the 1930s, Lhasa was a small town bounded by the Ling-Kor Road. The city eventually adopted an oval-shaped layout, with the Jokhang Temple located in the foci of its shape.

### 2.4. The Socialist Era (1951–1978)

Since the launch of the Chinese government administration in 1950, Lhasa gradually entered a new development stage. The foundation of 'New China' and the entry of Lhasa into modern civilisation have opened up new prospects for development and progress. The city has probably witnessed more changes in the following 20 years than in the preceding thousand years. The first national census in the People's Republic of China, which was conducted in 1954, revealed that 2,770,000 ethnic Tibetans were residing in China, among which 1,270,000 were located in Tibet (National Bureau of Statistics of China, 1955). In 1959, the land reforms in China marked a turning point in the history of Lhasa (i.e., a democratic reform laid the necessary economic, political and social foundations for the long-term development of the city). In 1965, the area that was placed under the control of the Dalai Lama's government from 1951 to 1959 was renamed to TAR. By serving as the long-lasting political and business centre of Tibet and South-western China, Lhasa played an increasingly important role in leading the economic and business development of Tibet. As a result of the Cultural Revolution, a 'total rest' of all activities, besides political campaigns, lasted in Lhasa from 1966 to 1978 as in the rest of China.

### 2.5. The economic, social and spatial transition (1978–1990s)

The economic reform and opening up of China has accelerated the urbanisation of Lhasa starting from the latter part of 1978, during which the city, along with the rest of Tibet, began to enter a new stage of economic growth, social development and spatial reconfiguration. Apart from accelerating the urbanisation process, the opening up of China improved the livelihood of people in Lhasa, as GDP growth rate increased, mostly due to the contributions of tertiary industry. In 1992, the government mandated Lhasa to undergo an economic liberalisation, after which the city began to develop a socialist market economy. Products with local characteristics as well as folk handicraft were transported from Lhasa to other parts of Tibet and China. Following the introduction of economic development policies, the influx of migrants into Lhasa dramatically altered the ethnic mix of people living in the city. In 2000, the urbanised area of Lhasa covered 53 km<sup>2</sup>, whilst the city population reached approximately 474,499 (National Bureau of Statistics of China, 2001).

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